NETWORK OPTIX

HD WITNESS®

User Manual

www.networkoptix.com

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Working with HD Witness

Launching and Closing HD Witness Client

A couple of different ways are available to launch the application:

Windows

- From desktop: HD Witness shortcut icon.
- From Start Menu: **Start –> Programs –> Network Optix –> HD Witness**.
- Directly from the installed folder:
  - For **x86** default is `C:\Program Files(x86)\Network Optix\HD Witness\Client\1.5\HD Witness Launcher.exe`
  - For **x64** default is `C:\Program Files\Network Optix\HD Witness\Client\1.5\HD Witness Launcher.exe`

Linux

- Using HD Witness shortcut icon.
- Directly from the installed folder: `/opt/networkoptix/hdwitness/Client/1.5/HD Witness Launcher.exe`

To close HD Witness **Client**:

- Click on the " " button located in the top right corner
- Go to *Main Menu –> Exit* (or press ***Alt+F4***).

Connecting to Enterprise Controller and Working Offline

In order to gain access to **Media Server** and **Cameras**, a user must be connected to **Enterprise Controller** (**EC**).

The connection to **Enterprise Controller** can be established by pressing the *Connect* button (or) or via Main Menu –> *Connect to (Another) Server*.

The current connection status is indicated by the color of the **Connect** button:

– connected

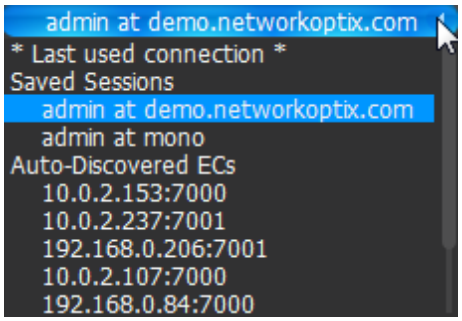
– disconnected

The connection dialog is displayed as follows:

HD Witness provides a powerful mechanism that can auto-discover **Enterprise Controllers** in **local network**. The easiest way to connect to EC is to use one of the auto-discovered EC.

It is possible to use saved connections as well.

To use predefined connections, click on the drop-down list. By default ,**Last Used Connection** is recommended:



Note: the computer EC is installed on may have several network interfaces. In this case, any available is displayed on the *Auto-Discovered ECs* list.

Connection details can also be inputted manually. The following values must be entered:

- *Host* – IP Address or name of the computer EC is installed on (`localhost` or `127.0.0.1` for All-in-One installation).
- *Port* – IP Port for access to EC (`7001` by default).
- *Login* and *Password* to connect to EC. If connecting for the first time, "`admin`" should be used as a login name. Use the same password that was set up during the initial installation.

To check connectivity to EC, press Test. If ok, access is granted. The following may cause connection errors:

- EC is not available:
  - specified IP Address is incorrect or inaccessible
  - specified port is incorrect
  - EC is stopped
- login and/or password are incorrect
- EC and Client are incompatible with each other (different versions)

To save and restore connection details:

- If current connection details are used, press Save and create a connection name to store, which will appear in the drop-down list next time a user logs in.
- To delete details of a stored connection, select it from the drop-down list and press Delete.
- If the last connection was not properly saved, the software will use its connection data from the next launch (* *Last Used Connection* *).

Note: passwords are not stored in saved connection details.

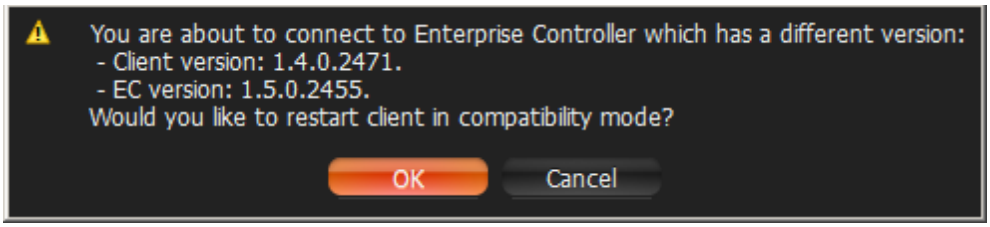
To log out, go to Main Menu and choose *Logout*.

If **Client** is not connected to **Enterprise Controller**, a user can only access **Local Files** (see "Playing Back Local Files in HD Witness").

To connect to a different EC under a different user, open the login window and enter new EC coordinates or login credentials. If canceled, the current user will still be connected to Enterprise Controller.

Launching HD Witness in compatibility mode

It is necessary sometimes to connect to Enterprise Controller that has a different version. A good example would be when HD Witness is installed at multiple sites (home, work, etc.) and only one installation is upgraded. In this particular case, Enterprise Controllers will have different versions and one Client should connect to another Enterprise Controller (Client at home connects to Enterprise Controller at work). In this case, the following message will appear:


You are about to connect to Enterprise Controller which has a different version:
- Client version: 1.4.0.2471.
- EC version: 1.5.0.2455.
Would you like to restart client in compatibility mode?
OK
Cancel

If click *OK*, the application will be restarted in compatibility mode.

Note: HD Witness remembers the Enterprise Controller it was connected to last and automatically suggests the compatibility mode for thenext launch.

Introducing User Roles

There are three types of user roles in HD Witness:

- **Owner** (user with "**admin**" login). Unlimited control. This user cannot be deleted.
- **Administrator**. Full control, except:
  - Change **Super Administrator (admin)** settings
  - Delete or change own role
- **Viewers** (**Live Viewer**, **Viewer**, **Advanced Viewer**). Limited control. A viewer cannot:
  - Manage users (except for changing their own password).
  - See servers and all connected cameras. Only the cameras assigned by the administrator are visible.
  - Change predefined layouts (layouts can be changed, but cannot be saved); however, it is possible to configure and save own layouts based on available resources (assigned cameras and local files).

Additional permissions can be assigned to users to be able to operate with available cameras (assigned by **Administrator**):

	ADMIN	CAMERA SETTINGS	PTZ CONTROLS	VIDEO ARCHIVES	EXPORT VIDEO	VIEW LIVE VIDEO
Administrator	●	●	●	●	●	●
Advanced Viewer		●	●	●	●	●
Viewer				●	●	●
Live Viewer						●

- View archive, perform search and forensic analysis
- Perform export from archives
- Set up cameras
- Set up PTZ on cameras.

If none of these permissions are assigned, a user can only view live videos on available cameras.

IMPORTANT. If any action or graphical element described in this document is not available to a specific user level, the following will apply (**Admin only**). If the action described in this document is unavailable to certain roles, it will be indicated in the corresponding topic.

The following represents a standard flow:

1. **Super Administrator** creates and configures all layouts for own use.
2. **Super Administrator** creates several users with a **Viewer** role.
3. **Super Administrator** creates and configures layouts for each **Viewer.**
4. **Viewer** logs into HD Witness and is only able to work with assigned layouts and cameras.

HD Witness User Interface Overview

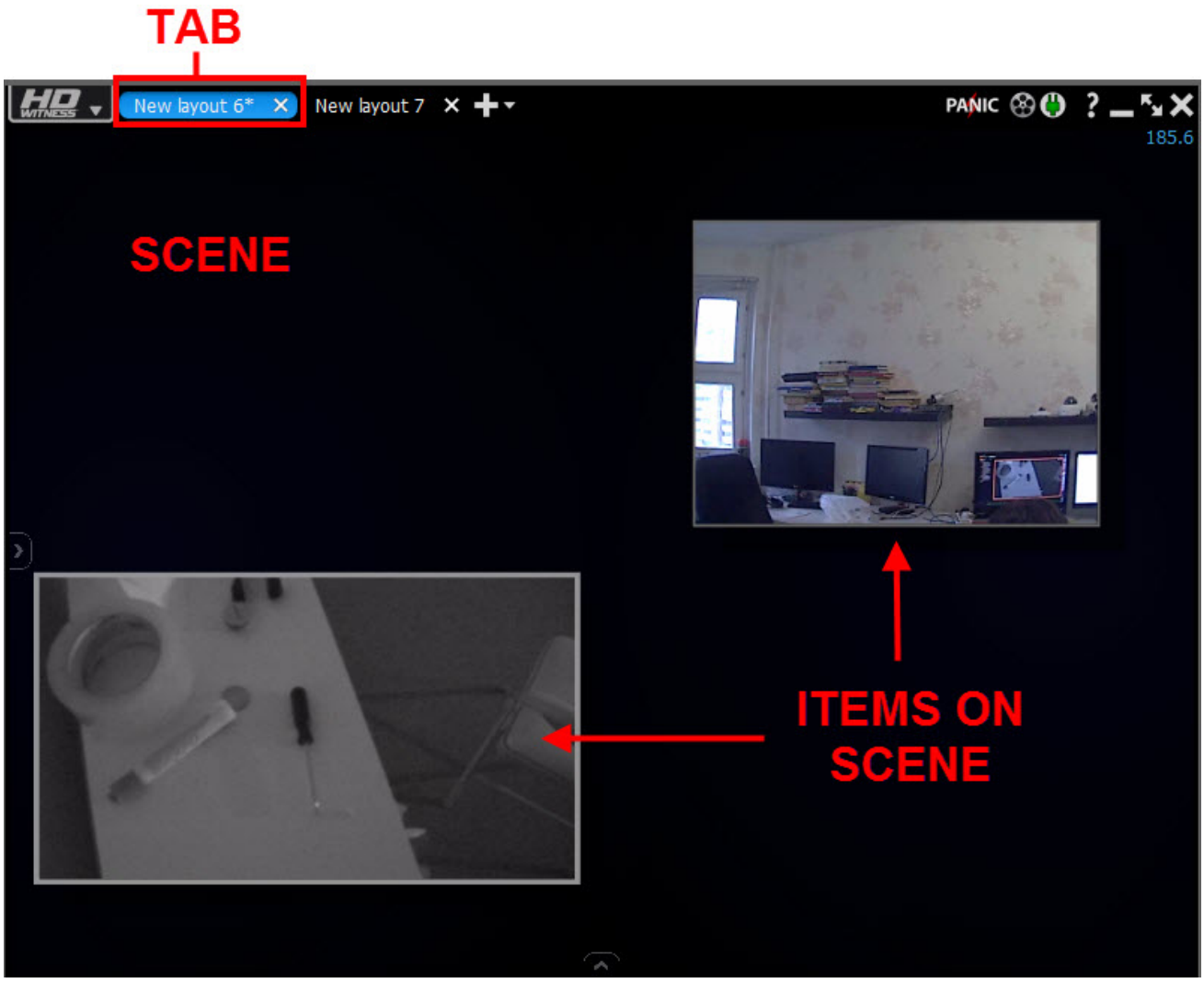
HD Witness **User Interface (UI)** includes the following main controls:

- **Scene** (main view). Displays video items from cameras or local files.
- Tab Navigator (dropdown at the top left). It contains main menu, tabs and the following buttons:
  - Connect/Disconnect button. This button indicates the current connection status and allows to connect or disconnect from EC.
  - **Window Buttons** (go/exit fullscreen, minimize, close window)
  - Panic Recording button. Starts/stops panic recording
  - Screen Recording button. Starts/stops screen recording
- Playback Panel (located on the bottom). Used for playing back local videos and live streams.
- Resource Tree (sliding menu on the left). Contains all servers, cameras, local files, users and layouts available to the current user.

Scene represents space for video Items can be placed on. HD Witness allows viewing streams from **Cameras** as well as **Local Video Files**.

Items are placed on **Scene** and can be saved as Layouts.

If several **Tabs** are opened, then each Tab contains its own Layout with **Items**:

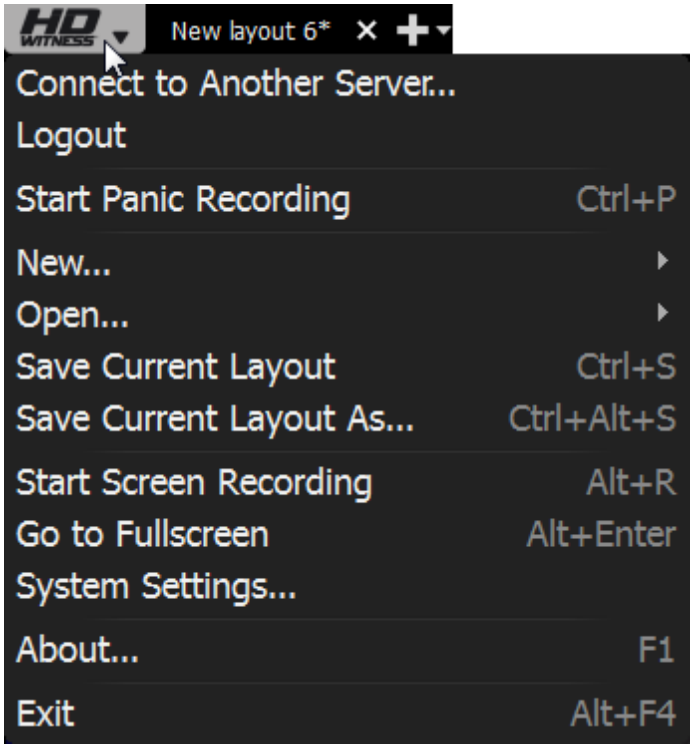


Main Menu

Main Menu allows users to gain access to various HD Witness features quickly and intuitively. **Main Menu** can be opened by clicking on the logo at the upper left corner:

Main Menu contains the following items:

- *Connect to (Another) Server* – allows connecting/disconnecting to/from Enterprise Controller (see "Connecting to Enterprise Controller and Working Offline")
- *Start/Stop Panic Recording* – see "Panic Recording"
- *New*:
  - *Tab* – creates an empty tab in Tab Navigator (see "Tabs")
  - *Window* – opens a new window of HD Witness (see "Working with Several HD Witness Windows")
  - *User* – creates a new user (see "Users Management").



- *Open* – opens and plays back **Local Files** (see "Playing Back Local Files in HD Witness"):
  - *File* – opens **Local Video File**
  - *Folder* – opens all **Local Video Files** in the selected folder and plays them back simultaneously (max **24** files for **x86** and max **64** files for **x64**).
- *Save Current Layout* and *Save Current Layout as...* – the currently displayed on the scene layout ("Saving Layouts (Admin Only)").
- *Start/Stop Screen recording* (see "Screen Recording (Windows Only)").
- *Go to/Exit Fullscreen* (see "Full Screen and Windowed Mode").
- *System Settings* – setup HD Witness.
- *Exit*.

Showing and Hiding Side Panels

Side Panels are extremely useful, though may be hidden by a user if needed. The buttons show/hide **Panels** as well as *Hide Panel* Context Menu item.

If an item is expanded to fullscreen (see "Expanding Items to Fullscreen"), all **Panels** slide off the screen and disappear.

To bring **Panel** back, click on .

Additionally, both left and right sliding menu panels can be pinned ( ):

- If **Pinned**: side **Panels** are always visible. If a panel is hidden manually, it will not reappear automatically.
- If **Unpinned**: **Panel** is only visible when the cursor is on. As soon as a user clicks off the **Panel**, the panel will disappear. **Panel** can reappear if a user points or clicks on .

F11 hides all **Panels**. To undo, press ***F11*** again or use ***Esc*** (toggle Fullscreen will also apply if hit ***Esc***).

Tabs and Layouts

Tabs are used to make layout navigation easier. Each **Tab** hosts a separate **Layout**. Tabs function very similar to any Internet browser.

The following actions can be performed with **Tabs**:

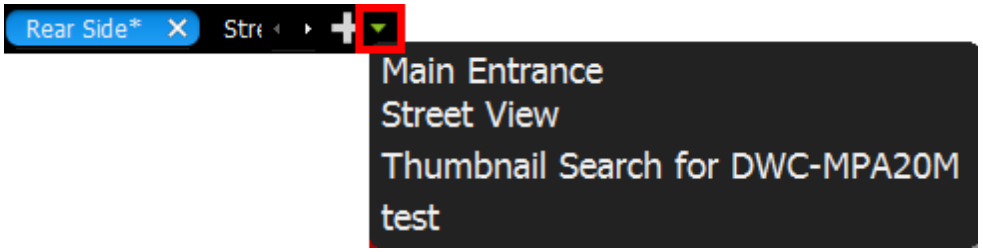
- Open a new tab:
  - **Tab Navigator**'s Context Menu –> *New Tab* (***Ctrl+T***)
  - Main Menu –> *New* –> *Tab*
  -
- Close a specific **Tab**: **Tab**'s Context Menu –> *Close* (***Ctrl+W***)
- Keep one **Tab** open – **Tab**'s Context Menu –> *Close All but This*
- Change the tab order – switch position by dragging and dropping a tab in the desired order.

IMPORTANT: A warning message will appear every time **Tab** is modified, suggesting to the user to save changes. See "Saving Layouts (Admin Only)".

If too many **Tabs** are opened at the same time, scrolling arrows will appear:

These arrows can be used to scroll **Tabs** left and right.

To navigate to a specific **Tab** or open a saved layout, use the ▾ button located on the right (next to ✚):



Additionally, a single **Layout** can be opened multiple times (in several **Tabs**) if needed.

Initially, no **Layouts** are configured in the system. An empty default **Tab** is shown ("**`New Layout`**"). If **User** tries to configure **Layout** in this **Tab**, asterisk will automatically be added to the caption (indicating a **Layout** change). The **Layout** will remain **local**.

The layout information is automatically passed to **Enterprise Controller** once **Layout** is saved (See "Saving Layouts (Admin Only)"). If **Layout** is saved successfully, it will be displayed in Resource Tree under the current **User**.

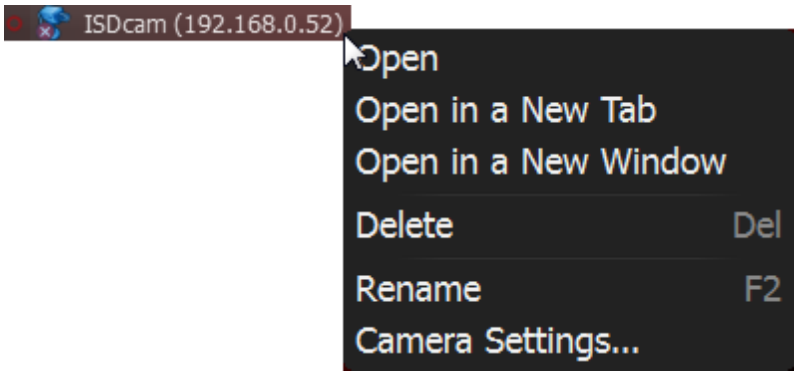
When closing all **Layouts**, the default blank **Tab** will still appear. If the current **Layout** is saved as "**`New Layout`**", the blank **Tab** located next to it will be renamed "**`New Layout 1`**" automatically.

Any saved **Layouts** that were previously opened, will appear automatically once **User** logs in.

See "Layouts Management" and specifically "Setting up Layout" sections for more details.

Context Menu

Context Menu displays all available actions as they relate to the selected element. **Context Menu** will appear by right-clicking on the desired element (or on empty space).

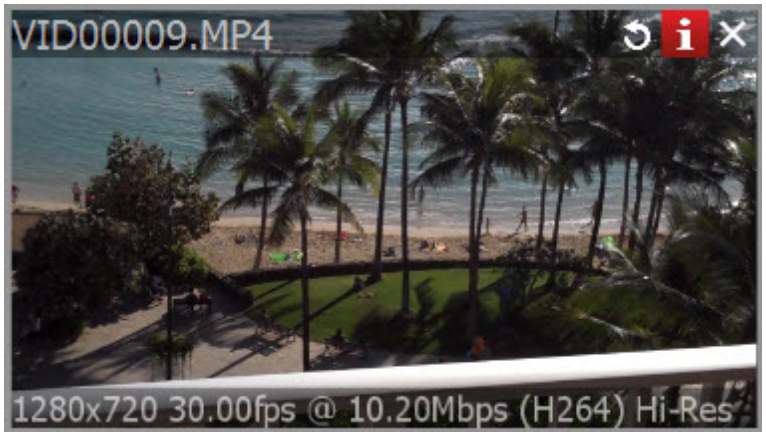


Items on Layouts and Scene

Video Item represents video recorded by a camera that can be played back within HD Witness.

Items displayed on **Scene** offer total video manipulation, a variety of features, streaming data and other related information.

Local videos are displayed as follows:



The file name is displayed in the upper left corner of **Local Video Item**.

The following buttons are displayed in the upper right corner of **Local Video Item**:

- – Rotation (see "Rotate")
- – Information: displays additional information about the current stream (see below)
- – Close (removes the item from the current layout)

Streams from cameras are displayed as follows:

The following information is display in the upper left corner of the camera item:

- Camera **Name**
- Current **Recording Mode** (**Camera** may be recording differently depending on its schedule):
  - – **Recording Always** (green circle)
  - – **Motion Recording** (red circle)
  - – **Low Resolution** - always, **High Resolution** - only while in motion (red circle crossed green)
  - – **Not Recording** (grey circle)

  For more information on recording settings, see "Setting up Recording Schedule".

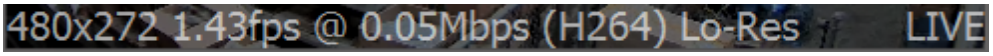
The following buttons are displayed in the upper right corner of **Camera** in addition to those displayed for local video:

- – PTZ (if camera supports) – see "Setting up PTZ"
- – Smart Search – see "Performing Smart Motion Search".

The following information can be useful during camera setup to help adjust to the desired FPS and bitrate. It may also be useful for monitoring local files.

To view item information, click on located in the top right corner of the item. To view information on multiple items at a time, select **Items** (see "Selecting Items"), open Context Menu and choose *Show Info* (***Alt+i***).

The following data will appear on the bottom:



- Current **Resolution** of the stream
- Current **FPS** of the stream
- Current **Bitrate**
- Current stream **Codec** (**H264** or **MJPEG**)
- Current **Resolution** (if **Dual-Streaming** is enabled for the camera): *Hi-Res* or *Lo-Res*
- Current **Time** of video playback or *LIVE* if viewing live from a camera

Additionally, the following messages may appear for camera items:

- **NO SIGNAL** – camera is offline
- **NO DATA** – no recording was performed. No data available.
- **Loading...** – awaiting data from Media Server
- **Unauthorized** – incorrect/missing login or password

Working with Resource Tree

Resource Tree is a convenient tool to display, search and manage available resources within the application. The format of **Resource Tree** depends on the current user's permission level.

Resource Tree is displayed on the left Panel and may contain different elements depending on a user level (see "Introducing User Roles"). For **Administrators, Resource Tree** is displayed as follows:

- **Servers** (admin only) – a list of servers registered in the system. Server IP addresses are also displayed (if the corresponding setting is enabled).

  Note: **Media Server** can have several network interfaces, so different IP addresses may be displayed.

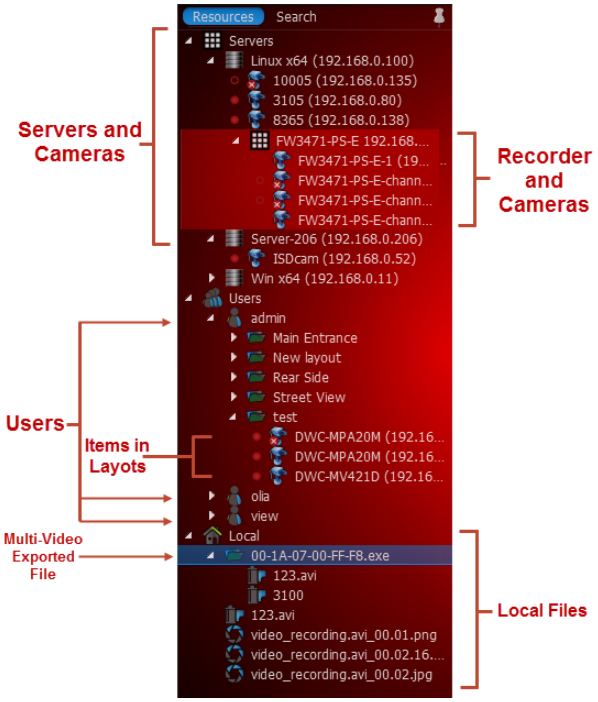
- **Cameras**. Cameras are displayed under **Servers** (admin only) and **Layouts**. If a camera appears on more than one layout, the camera will be listed multiple times in **Resource Tree**.

  The following indicators are displayed on the left:

  ● – a camera is in recording mode

  ○ – recording is set up for the camera, but not recording at the moment.

  Additionally **Cameras**' IP addresses are displayed (if the setting is enabled, see below).



- **Recorders** (admin only)**.** Displayed under **Servers** (admin only) and contains several channels (represented as **Cameras**).
- **Users** (**Administrator** can view several users in **Resource Tree**).
- **Layouts**. Contains resources (cameras and local files). Owned by users and displayed under each user.

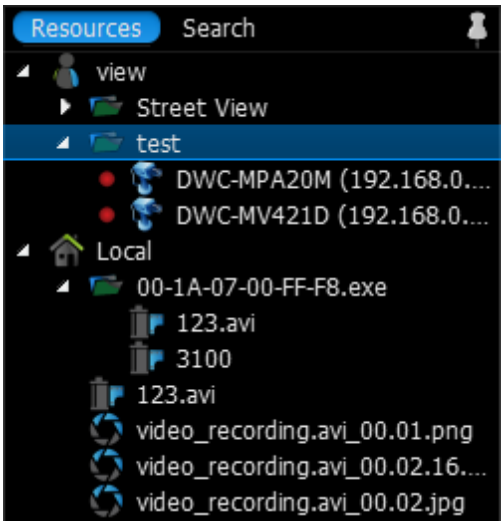
- **Local Files**. Contains the following:
  - **Video files**
  - **Images**
  - **Exported Video Files** (see "Exporting")
  - **Exported Multi-Video Files** and their contents: **Cameras**, or **Local Files** (see "Exporting the Layout in Multi-Video Format"
  - **Screen Recordings** (see "Screen Recording")
  - **Screenshots** (see "Taking a Screenshot").

Items that are currently placed on **Scene** are highlighted in bold in **Resource Tree**. A selected (focused) Item it has the">" mark in both **Server** and **Layout** sections.

To enable/disable displaying IP addresses in **Resource Tree**:

1. Open Main Menu and go to *System Settings*
2. Select/clear the flag in *Show IP in Tree* option (*Look and Feel* section).

Viewer's **Resource Tree** is shown as the following (see picture at the right-hand side):



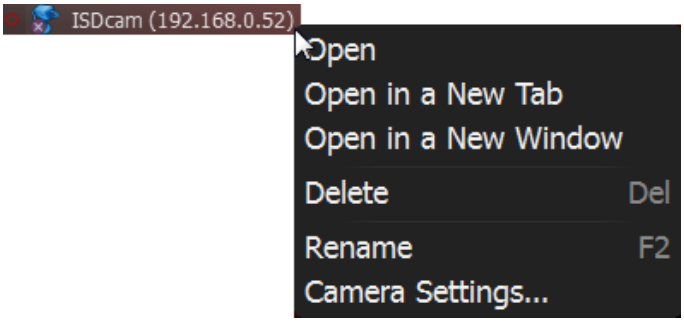
If **Client** is not connected to **Enterprise Controller**, only **Local File** names are visible.

The following actions can be performed in **Resource Tree**:

- **Expanding/collapsing** a tree node (+/- on keypad)
- **Scrolling** (if the tree contains multiple elements)
- **Multi-Selection**. Shift to select multiple items and hold Ctrl to select/deselect items individually.
- **Drag and drop**. An efficient way to organize and configure resources in the tree. The following chapters will further explain the drag and drop capabilities.
- Search.

Almost any resource (except **Local Files**) can be renamed by **Administrator** in **Resource Tree**. To rename a resource, simply select it and:

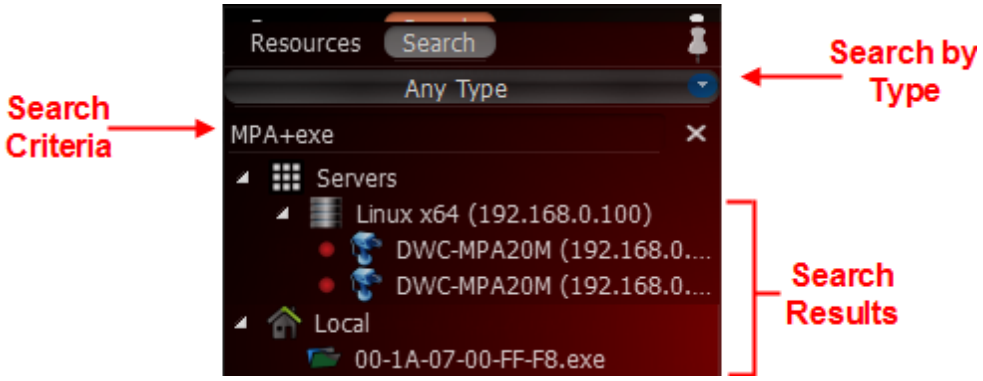
- **Left-Click** on it again (like Windows Explorer).
- **Right-Click** for Context Menu and choose *Rename* (or press ***F2***):



Search

HD Witness provides fast, powerful and flexible search engine that enables users to quickly locate the desired items on demand. To perform search, click on the *Search* tab in Resource Tree next to *Resources*.

Type any three consecutive characters from a resource name, MAC or IP into the box to activate search. Search results are displayed as follows:



IMPORTANT: Search results will appear on Scene immediately. If the search comes back with a high number of found items, only the first 24 will be displayed for x86 architecture and 64 results - for x64 architecture. Search results are automatically added to the current scene.

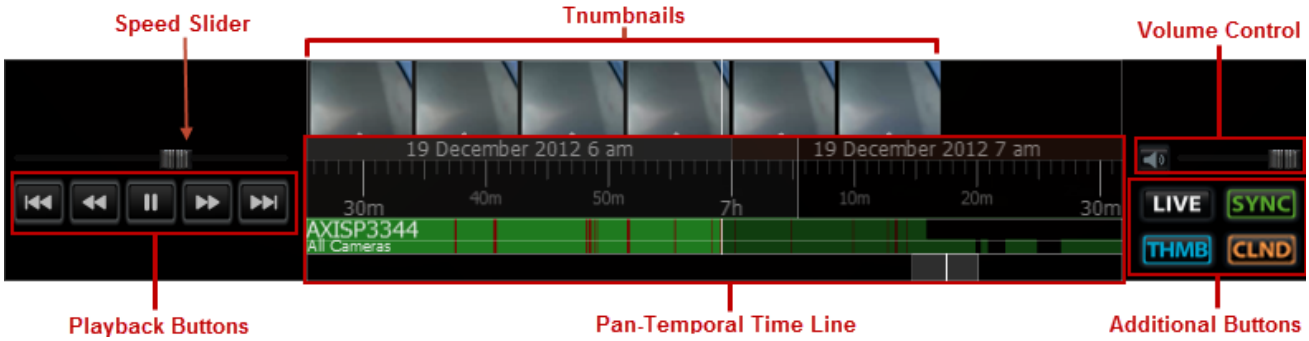
To refine search, use the following tips:

- Specify the resource type: *Any Type*, *Video Files*, *Image Files* or *Live Cameras*.
- Use special symbols to combine several search criteria:
  - "+" – to add a new criteria to the search. Example, "**`out`**" + "**`100`**" will pull in all files containing "**`out`**" and "**`100`**" in file description.
  - "\" – to avoid files containing certain characters. Example, "**`out \hdtv`**" will pull in all files containing "**`out`**", but no "**`hdtv`**".

All results will disappear from the scene once all characters are removed from the search box.

Playback Panel

HD Witness provides powerful and intuitive playback system. It includes seamless transition from live to archived footage, smooth archive playback, extensive search capabilities, local files playback, etc. All playback operations can be performed within the **Playback Panel**:



The following elements are displayed:

- **Playback Buttons** – used for playing back selected **Item**(s)
- **Speed Slider** – controls the playback speed of selected **Item**(s)
- Pan-Temporal Time Line – represents the archived data for selected **Item**(s)
- Volume Control – used to adjust volume for the selected **Item**
- **Additional Buttons**:
  - LIVE – switches selected camera(s) to a live playback mode or indicates that they are playing live. See "Navigating through Archive and Live"
  - SYNC – performs time synchronization of all cameras displayed on **Scene**. See "Navigating through Several Cameras Synchronously"
  - CLND – opens calendar to help navigate through archive (see "Using Calendar")
  - THMB – expands Time Line and shows small previews called **Thumbnails**. See "Using Thumbnails for Better Navigation".

Full Screen and Windowed Mode

HD Witness is recommended to be operated in full screen. To toggle full screen or bring the application to a window mode:

- and buttons
- Main Menu items (*Go to Fullscreen*/*Exit Fullscreen*) or ***Alt + Enter***
- ***Esc***
- ***F11*** (all side panels will be hidden).

Moreover it is possible to expand a single item on fullscreen. See "Expanding Items to Fullscreen".

Changing Interface Language

To change HD Witness interface language:

1. Open Main Menu and go to *System Settings*.
2. Select desired language in *Language* drop-down list (*Misc* section).
3. Click *OK* when done or *Cancel* to discard changes.
4. Restart **Client**.

Getting Context Help

HD Witness provides intuitive context help system on each interface element.

To invoke help:

1. Press button.
2. **Left-Click** on the desired interface elements.

Context Help contains links to other topics that can be useful as well.

HD Witness Quick Start

This section provides recommendations on system settings for HD Witness to be configured properly.

First, a sufficient number of **Licenses** should be obtained and activated (see "Obtaining and Activating HD Witness Licenses (Admin Only)").

Then, **Storages** on each **Media Server** should be configured (see "Configuring Media Server Storages (Admin Only)").

All **Cameras** should be properly set up (see "Camera Managemnent"). Same with **Recording Settings** (see "Setting up Recording Schedule (Admin Only)").

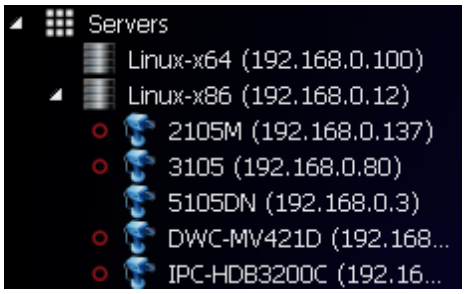
Once completed, it becomes possible to create multiple **Users**, configure **Layouts** for them and more.

Obtaining and Activating HD Witness Licenses (Admin only)

HD Witness's license policy is quite simple. A single **License** allows recording of one camera only. The application has no camera count restrictions. An unlimited number of cameras can be connected and viewed live.

Note: If recording is enabled for **Camera**, **License** is considered **used** even if recording is not performed.

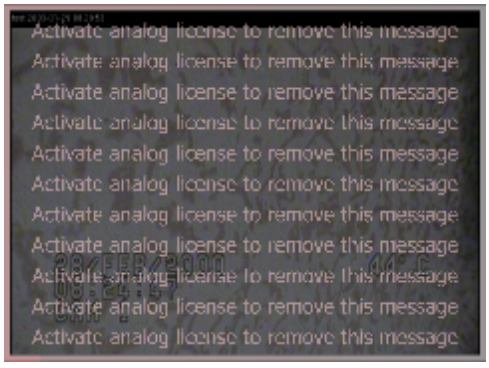
For instance the following screenshot illustrates the situation that all cameras are offline and not recording. However recording is enabled on four cameras (marked by o):



In this case 4 **Licenses** are being used.

See also "Setting up Recording Schedule".

HD Witness works slightly differently with analog cameras. In order to view analog cameras Analog or regular **Licenses** should be purchased and used. Otherwise if try to view Analog cameras (live or archive) the following will be displayed:



Both **Analog** and **Digital Licenses** can be used to view streams from analog cameras. HD Witness automatically chooses the best option (**Digital License** will be used for analog camera only if there is no **Analog Licenses** left).

See "Setting up Analog Cameras" for more details.

HD Witness comes with **four free Licenses** automatically.

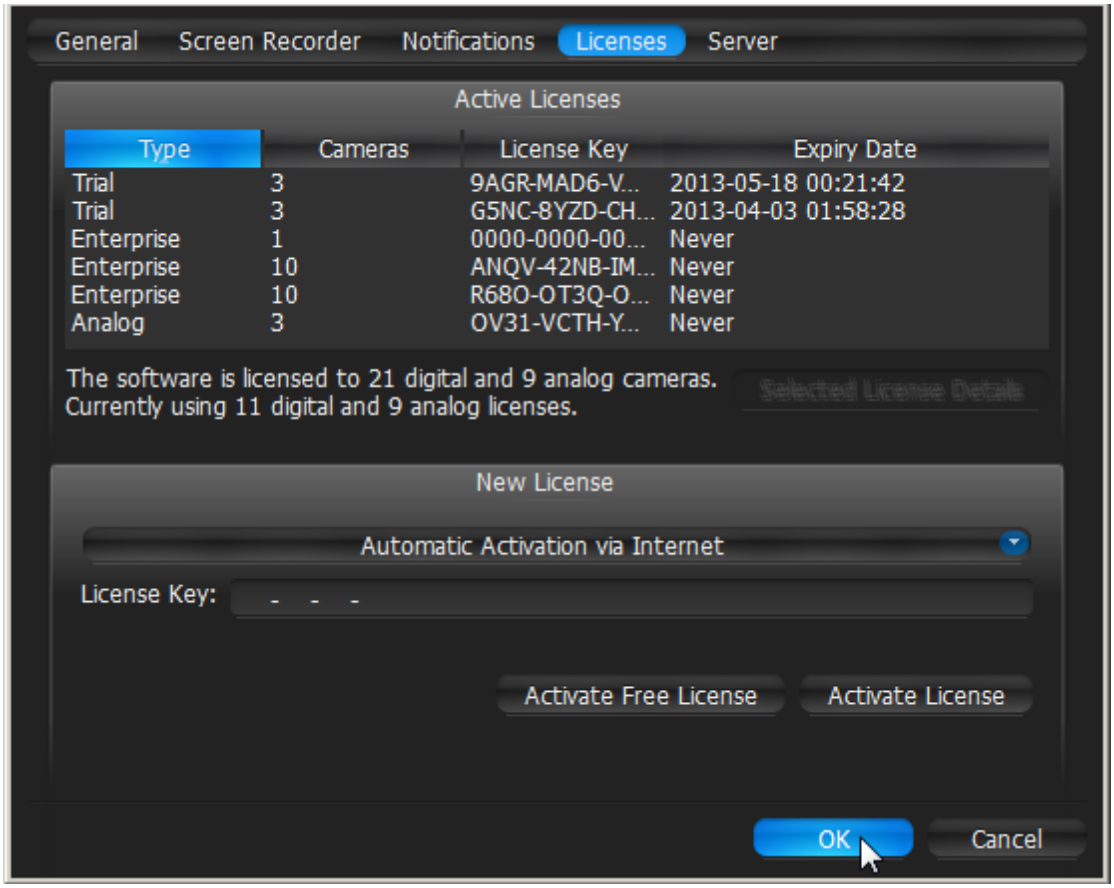
To activate free **Licenses**:

1. Open Main Menu –> *System Settings*.
2. Go to *Licenses* tab.
3. Click *Activate Free License*.

To get additional **Licenses**, contact the local HD Witness reseller (or Network Optix customer service at http://networkoptix.com).

To activate a **License Key** over the Internet:

1. Select the *Licenses* tab in *System Settings*.

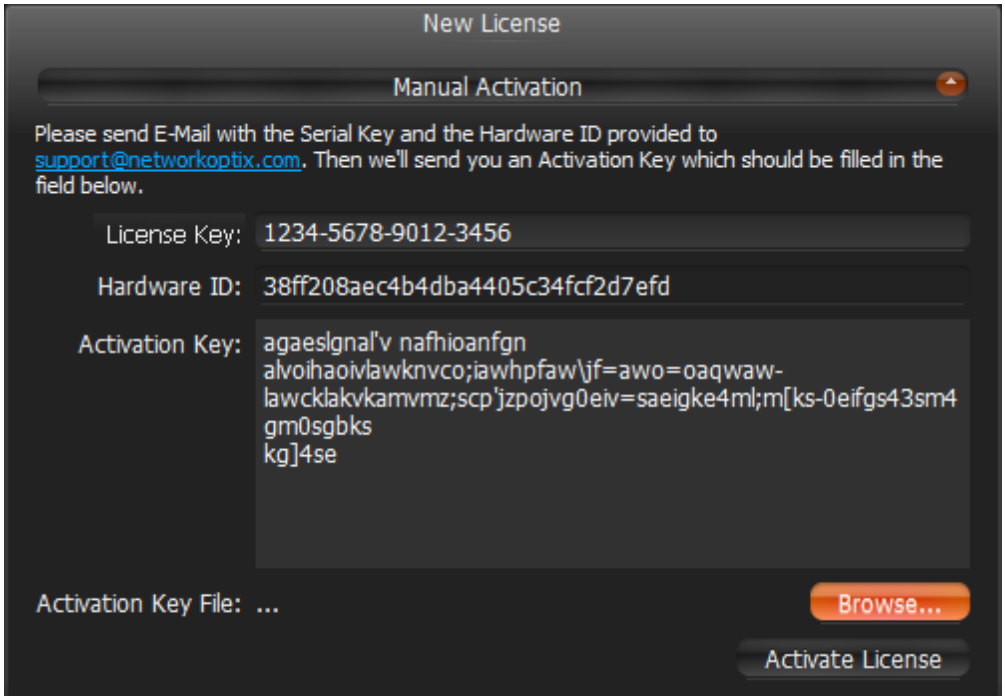


2. *Automatic activation via Internet* must be selected.
3. Enter *License Key* and click *Activate License*.

If HD Witness is not connected to the Internet, then licenses can be activated offline.

To activate a license (free or commercial) offline:

1. Go to *Licenses* tab in *System Settings*.
2. Click *Manual Activation*.


New License
Manual Activation
Please send E-Mail with the Serial Key and the Hardware ID provided to support@networkoptix.com. Then we'll send you an Activation Key which should be filled in the field below.
License Key:
1234-5678-9012-3456
Hardware ID:
38ff208aec4b4dba4405c34fcf2d7efd
Activation Key:
agaeslgnal'v nafhioanfgn alvoihaoivlawknvco;iawhpfaw\jf=awo=oaqwaw-lawcklakvkamvmz;scp'jzpojvg0eiv=saeigke4ml;m[ks-0eifgs43sm4gm0sgbks kg]4se
Activation Key File: ...
Browse...
Activate License

3. Copy Hardware ID and email to http://networkoptix.com
   - *License Key*: paste **License key** received from reseller (or paste `0000-0000-0000-0001` for **Free License**).
   - *Hardware ID*: paste **Hardware ID** here.

   An activation key will be provided upon request.
4. As soon as the activation key is received, proceed with one of the following:
   - Paste it into the *Activation Key* field and click *Activate License*.
   - Save it as a text file (i.e. **`key.txt`**), move to the target computer, browse the file and click *OK*.

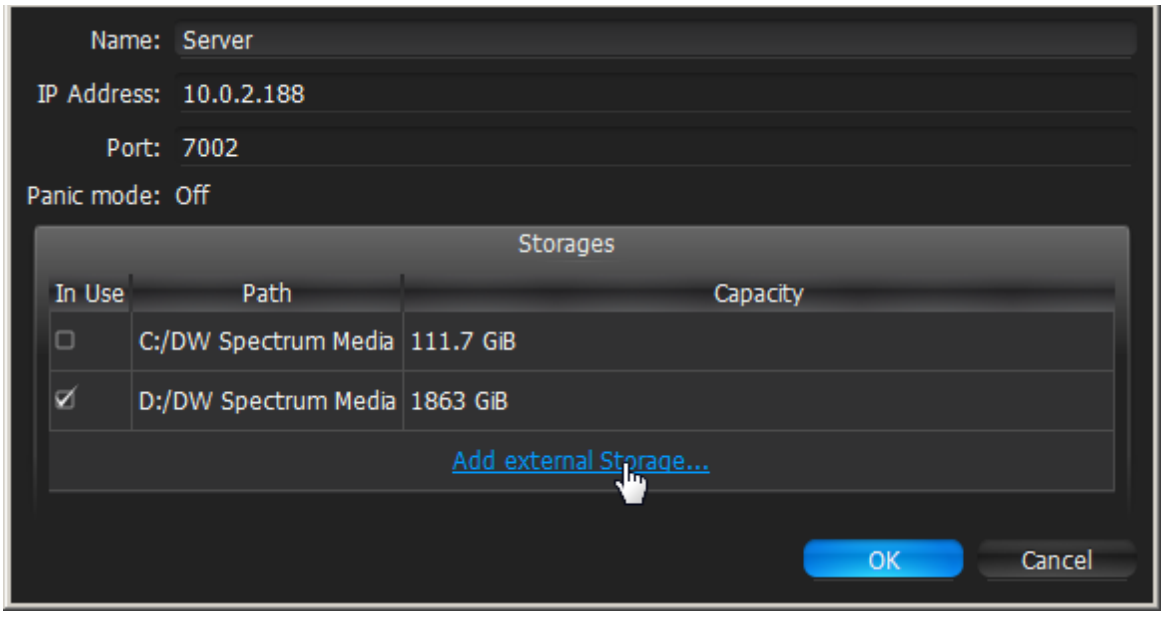
Obtaining and Configuring Media Server's Additional Settings (Admin Only)

In addition to the basic **Media Server** configuration that are setup during installation and configuration, an Admin also performs the following:

- Change Name
- Configure Storages

To configure **Media Server** parameters:

1. Open the desired **Media Server** in Resource Tree.
2. Open server's Context Menu and choose *Server Settings*.



The following Media Server parameters can be checked and configured:

- *Name* – can be changed here or in Resource Tree
- *IP Address* – cannot be changed. Displayed in Resource Tree as well if the corresponding setting is enabled (see "Working with Resource Tree")
- *Port* – cannot be changed from the client
- *Panic Mode* – indicates whether or not Panic Recording is being performed
- *Storages* – see "Configuring Media Server Storages (Admin Only)".

Configuring Media Server Storages (Admin Only)

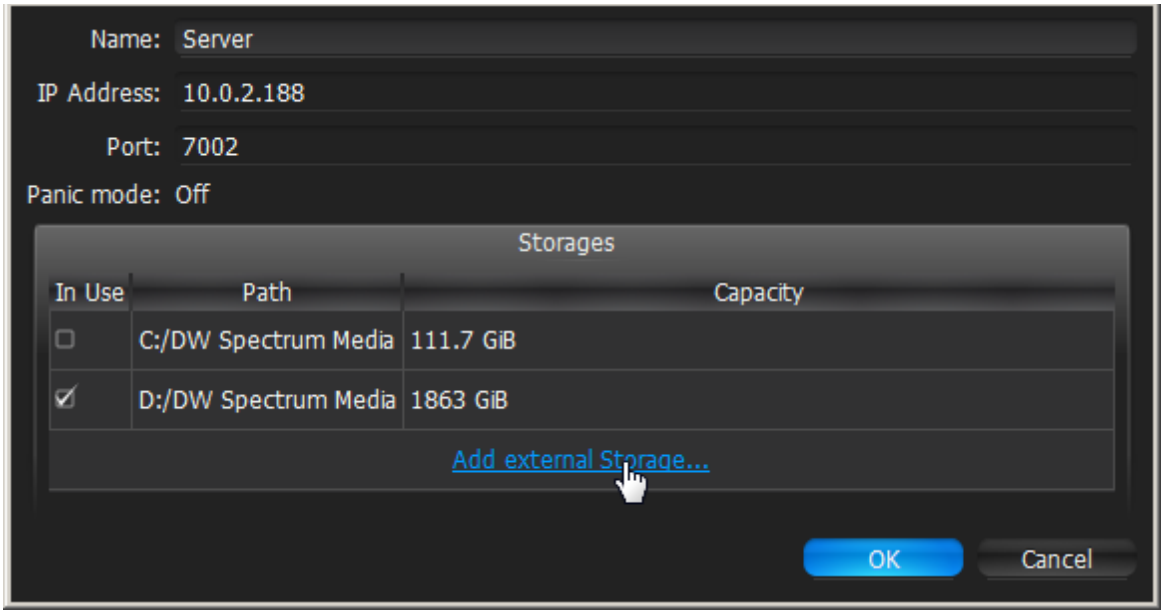
HD Witness provides an easy and flexible storage management policy. Each **Media Server** can use unlimited number of local and network **Storages**. If more than one **Storage** is used, **Media Server** will automatically balance the space consumption. The more free space the storage has, the higher the usage intensity will be.

Storage is considered to be a separate hard disk partition. If a partition has more than **100 Gb** of free space, HD Witness uses it automatically.

Additionally it is possible to add network storages.

To configure **Media Server Storages**:

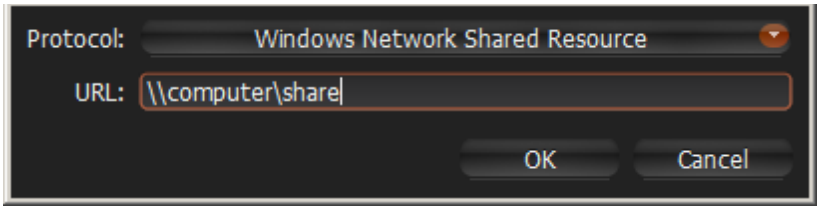
1. Open the Server Settings
2. Go to *Storages*:



As displayed above, the computer has 2 partitions and only disk D is used for storage because disk C has less than 100 Gb of free space.

3. To select Storage to be used check *In Use* flag

4. To add **External Storage**, click *Add* and enter the storage Samba path:



IMPORTANT. If using **Network Storage**, the computer Media Server is installed on must have non-password read-write access to the Samba share. The most convenient way is to mount it as local disk (via **Samba**).

5. Click *OK*. At this point, all **Storages** will be checked for validity and ability to write to. If the drive has insufficient space, a warning will appear.

The **Storage** structure on the partition is as follows: **`<drive>/HD Witness Media/$Resolution/$MAC/$YYYY/$MM/$DD/$HH`**:

- **`$Resolution`**:
  - **`hi_quality`** – full resolution streams
  - **`lo_quality`** – low resolution streams
- **`$MAC`** – MAC address of the recorded device
- **`$YYYY`** – Recorded Year, **`$MM`** – Recorded Month, **`$DD`** – Day, **`$HH`** – Hour

IMPORTANT. 5 GB of free space is always preserved on **Storage**.

Deleting Media Server (Admin Only)

In some instances, it may be necessary to delete **Media Server** from the system.

Note: **Media Server** can only be deleted when **offline**.

To delete **Media Server**, locate it in Resource Tree, **Right-Click** for Context Menu and select *Delete*.

IMPORTANT. All cameras that are hosted on this specific server will be deleted as well. Recorded data will be kept in server's storages.

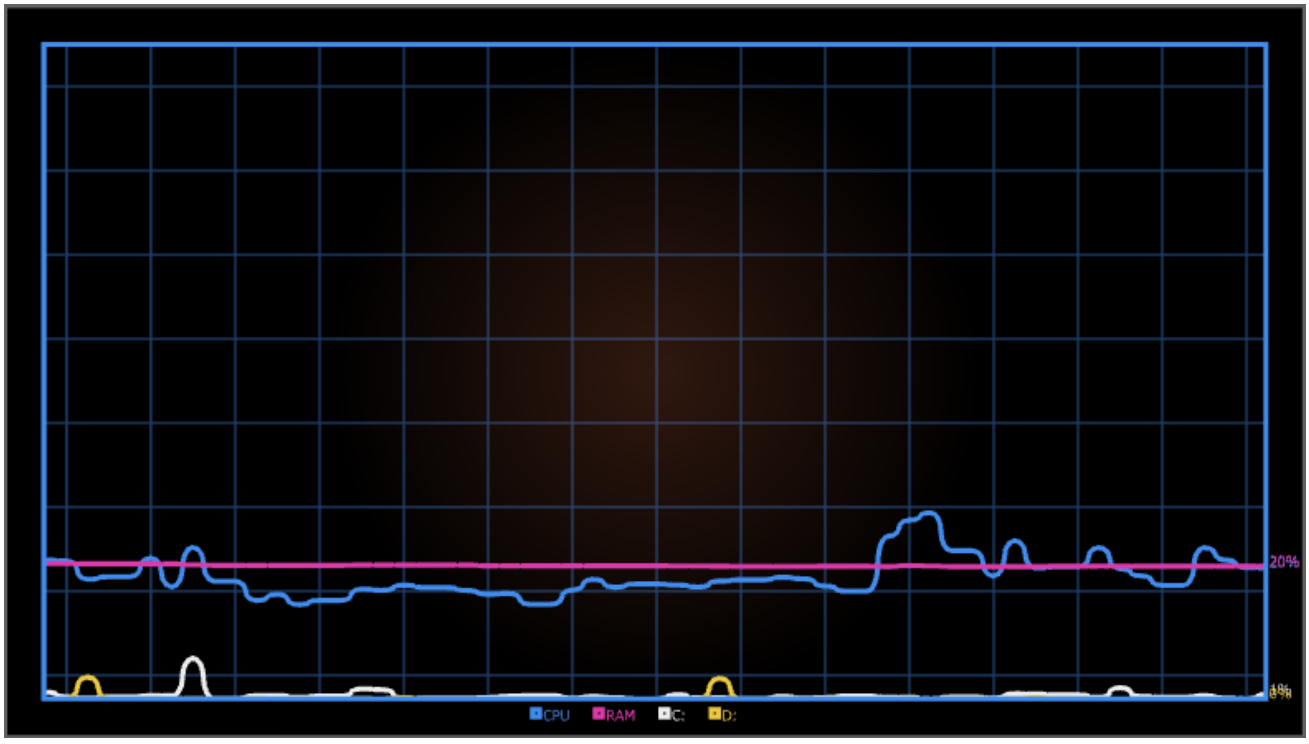
Media Server will automatically be registered in **EC**, discover all **Cameras** and start operating once it is back online. The deleted camera's archive will remain available. It will be required to perform all storage settings and configure all discovered **Cameras** again.

Monitoring Media Servers (Admin Only)

HD Witness enables users to perform monitoring the health of **Media Servers** in the real-time mode. To proceed, perform one of the following:

- Drag **Media Server** from Resource Tree to **Scene**
- Open Media Server's Context Menu and choose *Monitor* (*Monitor in a New Tab* or *Window*)

The information is displayed as follows:



- CPU Load
- Memory Usage (*RAM*)
- Hard disk partitions usage (*C:* and *D:* in this case).

User can perform standard manipulations with **Monitoring Item**: move, resize, swap, duplicate etc (see "Items on Layouts").

To stop monitoring, remove the corresponding item from **Scene**.

Multiple **Media Servers** can be monitored simultaneously.

Cameras and Encoders Management

It is extremely easy to configure **Cameras** in HD Witness.

The following **Camera Settings** are crucial for the application to function properly:

- **Recording schedule** (see "Setting up Recording Schedule")
- **Authentication** (the default password has been changed for cameras). See "Configuring Camera Authentication ".

IMPORTANT. Most camera parameters can only be configured by **Advanced Viewer** (permission level is required). A basic viewer can access camera configuration, but cannot make any changes. See the "Users Management" section for more.
The section describes the following functions related to **Cameras**:

- Adding Cameras and Encoders
- Setting Up Cameras
- Setting Same Parameters for Multiple Cameras
- Swapping Cameras between Media Servers (Admin Only)
- Deleting Cameras (Admin Only)

Adding Cameras and Encoders

This section provides information on how to add cameras to the HD Witness resource list.

Choose one of the following methods:

- Discovering Cameras Automatically
- Adding Cameras and Encoders Manually (Admin Only).

Discovering Cameras Automatically

HD Witness provides a powerful and easy-to-use mechanism for automatic camera discovery. It is required that a camera should be accessible via **Broadcast.**

As soon as **Media Server** is started and connected to **EC**, it automatically performs camera discovery in its network. Once a camera is discovered, its parameters will be displayed in Resource Tree automatically.

If a camera does not transmit media data, it is marked as **Offline**.

If **Media Server** is offline, all **Cameras** the server is hosting are switched to the offline status **automatically**.

Adding Cameras and Encoders Manually (Admin Only)

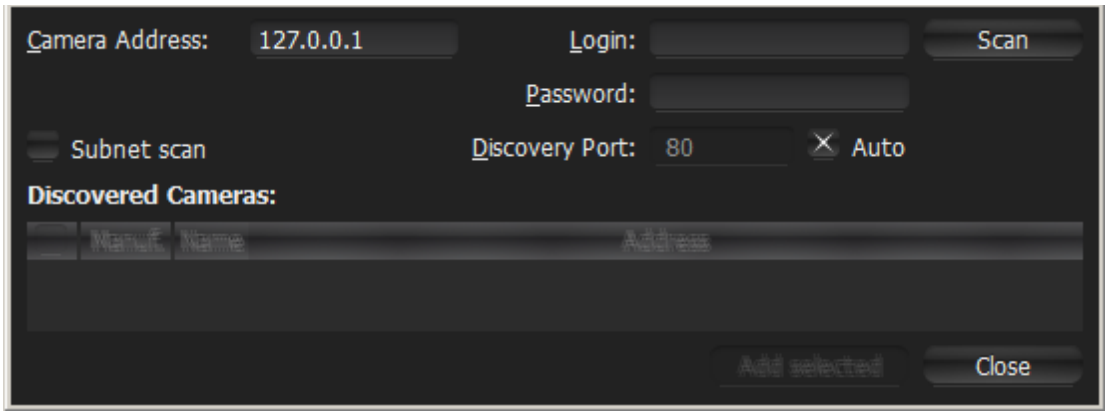
If **Camera** or **Encoder** is not accessible via broadcast (usually if it is located in a different network), it will not be discovered automatically. In this case HD Witness provides an ability to add **Camera** manually. For instance, it can be useful if **Camera** or **Encoder** is located in a different network or can even be accessed via Internet only. It is also possible to add several **Cameras** simultaneously.

The following camera models that can be added manually:

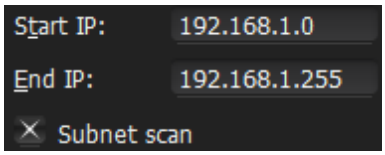
- Arecont Vision
- D-Link
- ISD
- All **ONVIF-compliant** cameras.

To add one or more **Cameras/Encoders**:

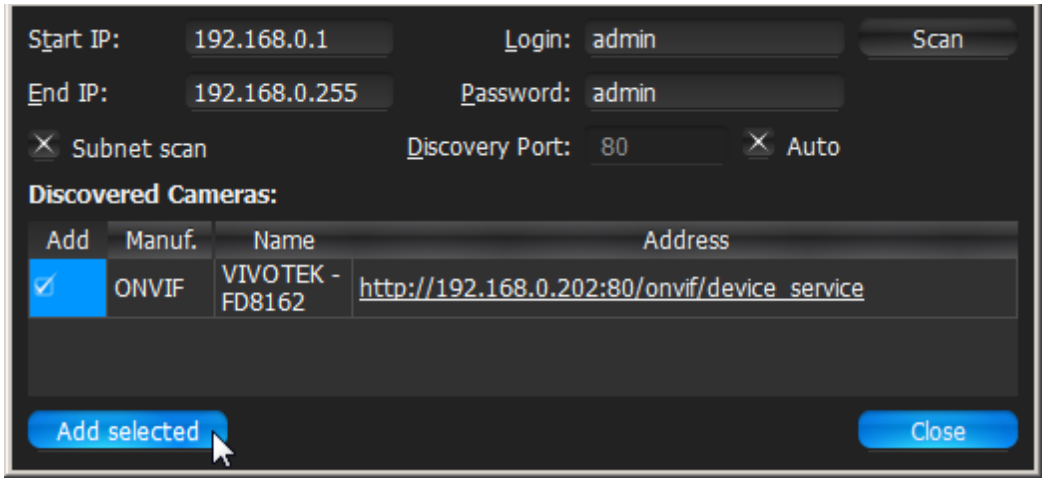
1. **Right-Click** on server in Resource Tree and open Context Menu.
2. Choose *Add Camera(s)...* The following view will appear:



3. Choose one of the following:
   - To add a single **Camera**, enter camera's *Address* (**IP** or **Host Name** the **Camera** can be resolved on)
   - To add several **Cameras** at once, select *Subnet Scan*:



4. Enter the desired IP range to start scanning. By default, addresses `0–255` of the same subnet are suggested. As a result, the entire specified network will get scanned for **Cameras**.
6. Specify authentication parameters in *Login* and *Password* fields (if needed).
7. Specify *Discovery Port* if needed. Most **Cameras** are discovered on port `80`, so it is better to leave on *Auto* setting.
8. Press *Scan* to initiate search. If cameras are located, they will be displayed in order.



9. Select desired cameras and click *Add selected*.

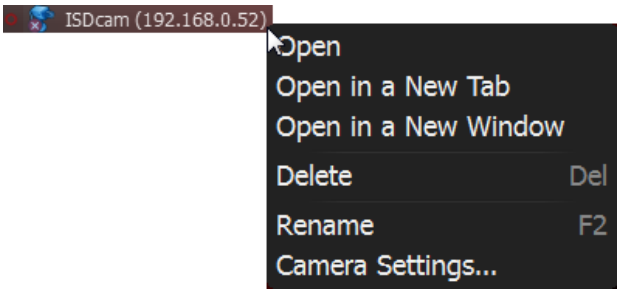
Cameras should be added to Resource Tree.

Setting Up Cameras

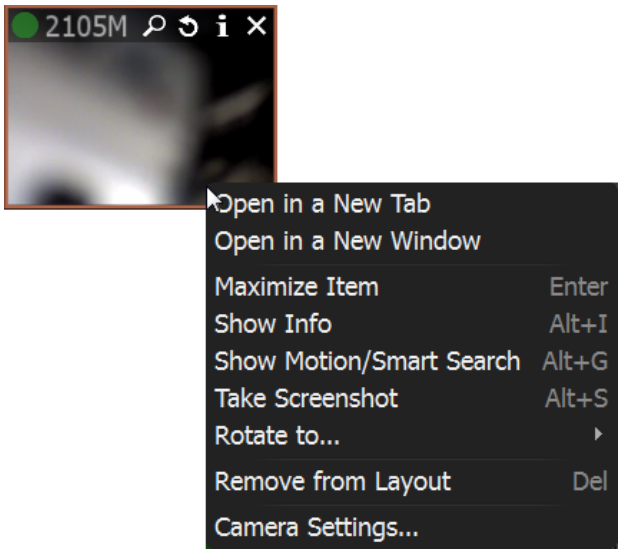
It is possible to configure **Cameras** for **Administrators** and **Viewers** that have the appropriate access **Permission**. **Administrators** can configure all cameras and **Viewers** can only use the ones that are assigned to them by **Administrators**.

A user can locate *Camera Settings* from **Camera**'s Context Menu.

From Resource Tree:



From **Scene**:



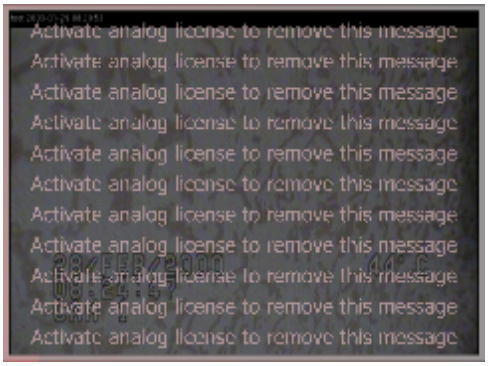
The following actions can be performed when configuring **Camera Parameters**:

- Renaming Camera
- Obtaining Camera's IP, MAC , Firmware and Model
- Configuring Audio for the Camera
- Configuring Camera's Authentication
- Setting up PTZ
- Configuring Proprietary Camera Parameters
- Setting up Recording Schedule
- Setting up Motion Mask and Motion Sensitivity.

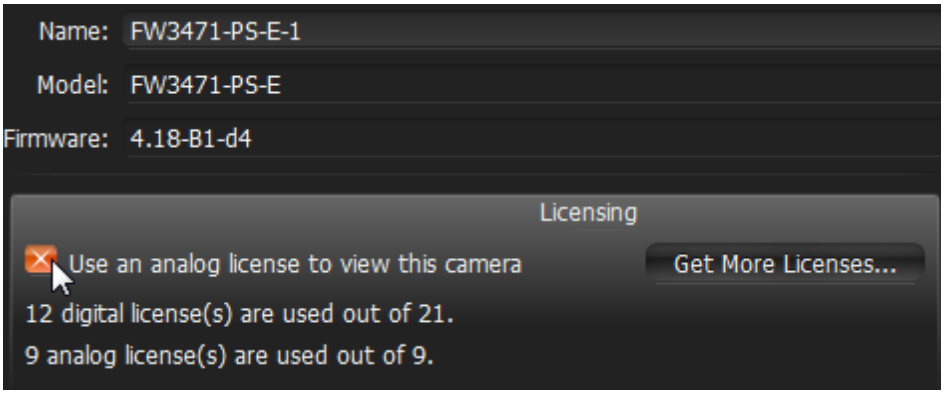
Setting up Analog Cameras

HD Witness provides special **Licenses** for **Analog Cameras**. A user must purchase an analog **License** to be able to view an analog **Camera**; however, regular **Licenses** can be used for Analog **Cameras** as well.

If a user tries to **view Analog Camera** (live or archive) without using **License** the following will be displayed:



To set up **Analog Camera** open camera settings and go to *General*:


Name: FW3471-PS-E-1
Model: FW3471-PS-E
Firmware: 4.18-B1-d4
Licensing
Use an analog license to view this camera
Get More Licenses...
12 digital license(s) are used out of 21.
9 analog license(s) are used out of 9.

Check *Use an analog license to view this camera*. HD Witness automatically chooses the best option (**Digital License** will be used for analog camera only if there is no **Analog Licenses** left).

The number of **Licenses** available and used is displayed below.

The following types of **Analog Cameras** are supported:

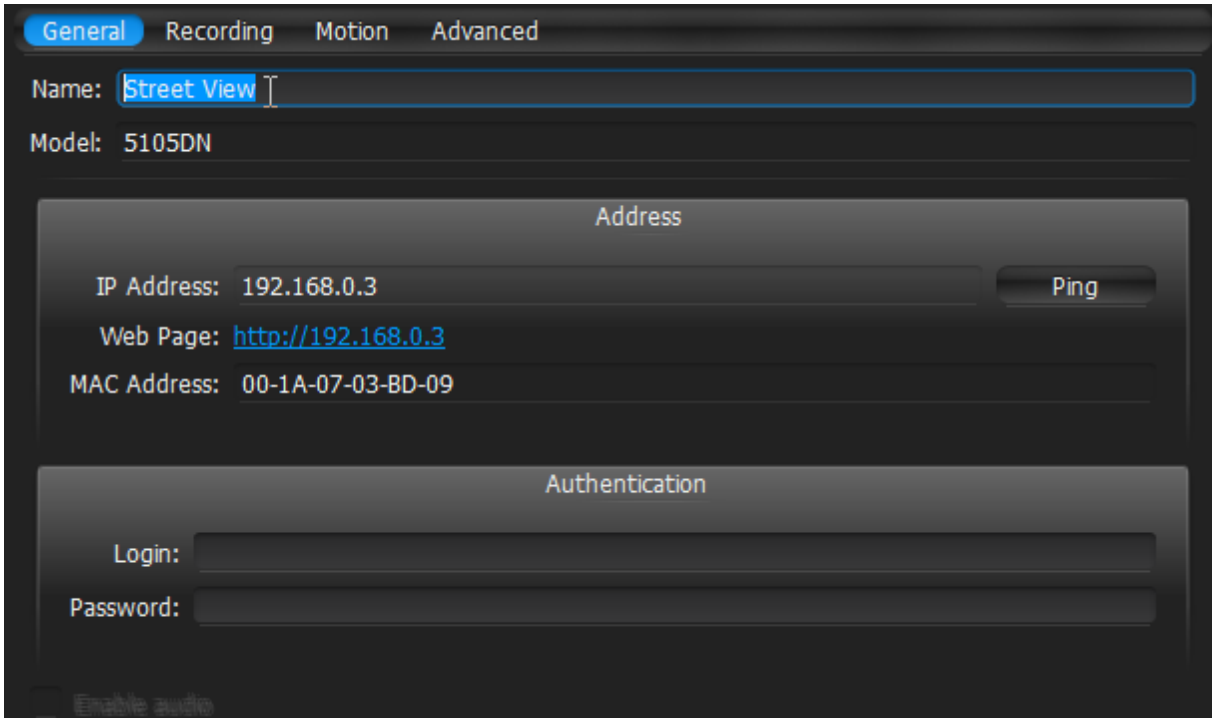
- **Analog Cameras** plugged into **Encoder**. Those cameras act like regular Cameras: it is possible to configure Recording Schedule for them as well as Motion Detection.
- **Analog Cameras** plugged into **Recorder**. Those cameras are recorded somewhere else so HD Witness only pulls the desired stream from the recorder. It is not possible to configure Recording Scheduleand Motion Detection for those **Cameras**.

Renaming Camera

If a camera is discovered automatically (see "Discovering Cameras Automatically"), it is displayed in Resource Tree as a predefined sequence ("model"or "manufacturer + model"). For instance, `10005` for Arecont Vision cameras or `DWC-MD421D` for Digital Watchdog.

Note: It is possible to configure **Cameras** for **Administrators** and for **Viewers** that have an appropriate **permission** level.

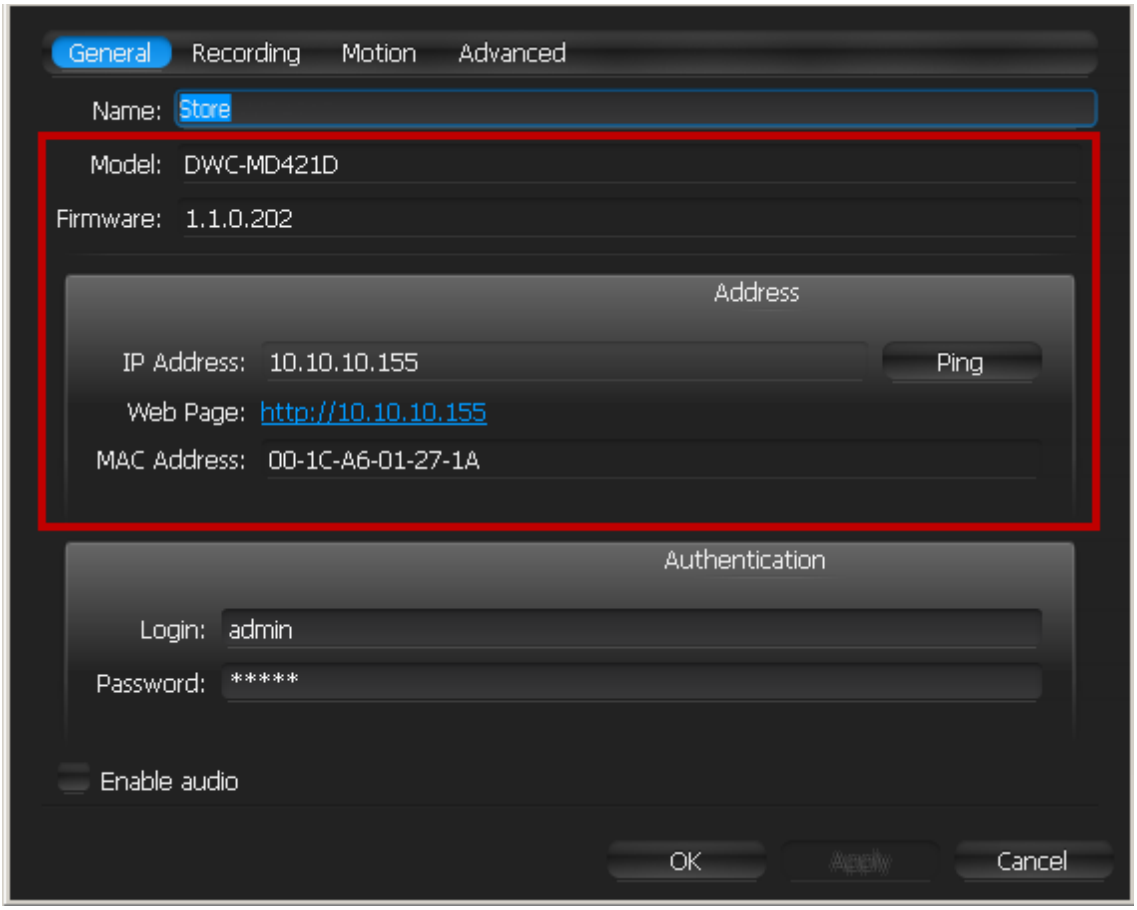
It is recommended to rename same camera models for easier identification. Cameras can be renamed directly from Resource Tree using Context Menu or in camera settings:



IP-addresses are added to a camera name automatically and are **non-editable**. It is possible to deactivate displaying IP addresses in Resource Tree.

Obtaining Camera's IP, MAC, Firmware and Model

To obtain **Camera**'s IP and MAC, open camera settings and go to *General*:



Note: the fields are non-editable.

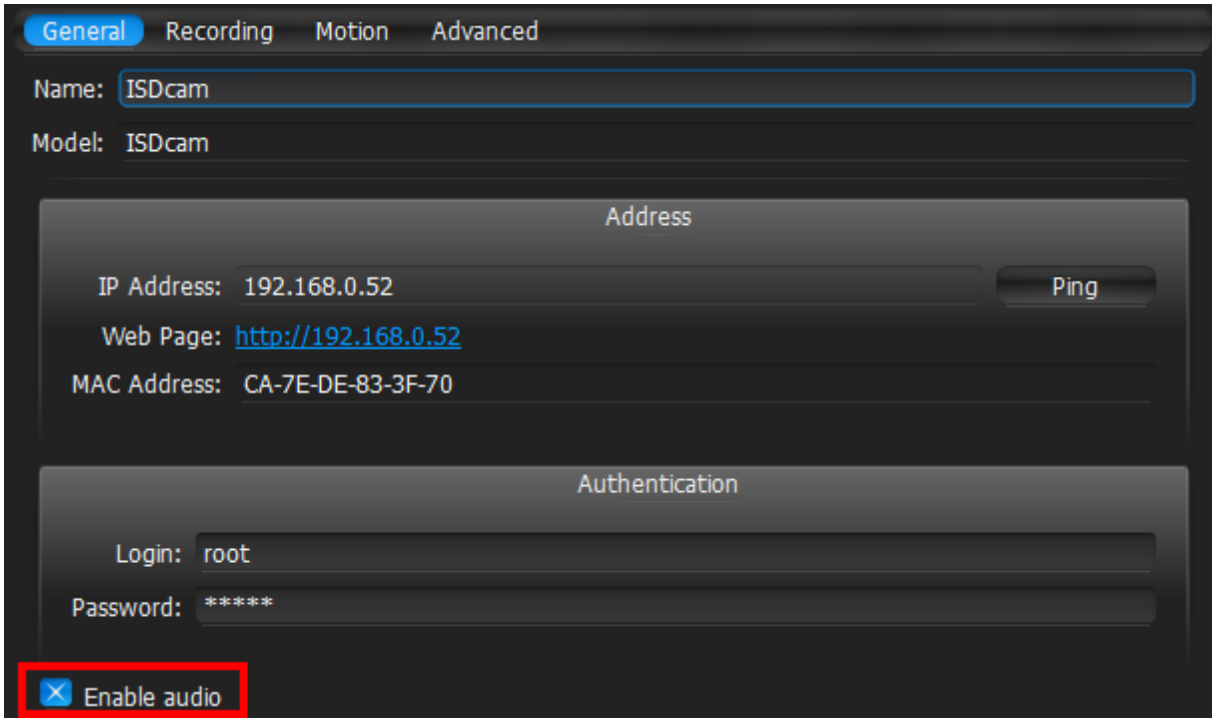
It may be useful to go to **Camera**'s web page by clicking on the appropriate hyperlink to check or set up **Camera**'s parameters. See "Configuring Proprietary Camera Parameters" for details.

It is possible to check if a camera is accessible by pressing *Ping* button.

Configuring Audio for the Camera

HD Witness allows to record audio from Cameras (if camera has this feature and the microphone is connected to it).

To set up audio recording for the camera open camera settings and go to *General*:



To enable/disable audio enable or disable the corresponding flag. The settings are applied right after *Apply* or *OK* are clicked.

It may be useful to go to **Camera**'s web page by clicking on the hyperlink. See "Configuring Proprietary Camera Parameters" for details.

Configuring Camera's Authentication

All **Cameras** come with a predefined login and password combination. During the discovery process, HD Witness attempts to use manufacturer's default credentials to access a camera.

However, default login and passwords may vary between models/lines or can be changed deliberately, which prevents HD Witness from accessing **Cameras** and acquiring media streams. As a result, **Camera** is shown as **Unauthorized** ( ) in Resource Tree. The following message will appear if a user attempts to view a live stream:

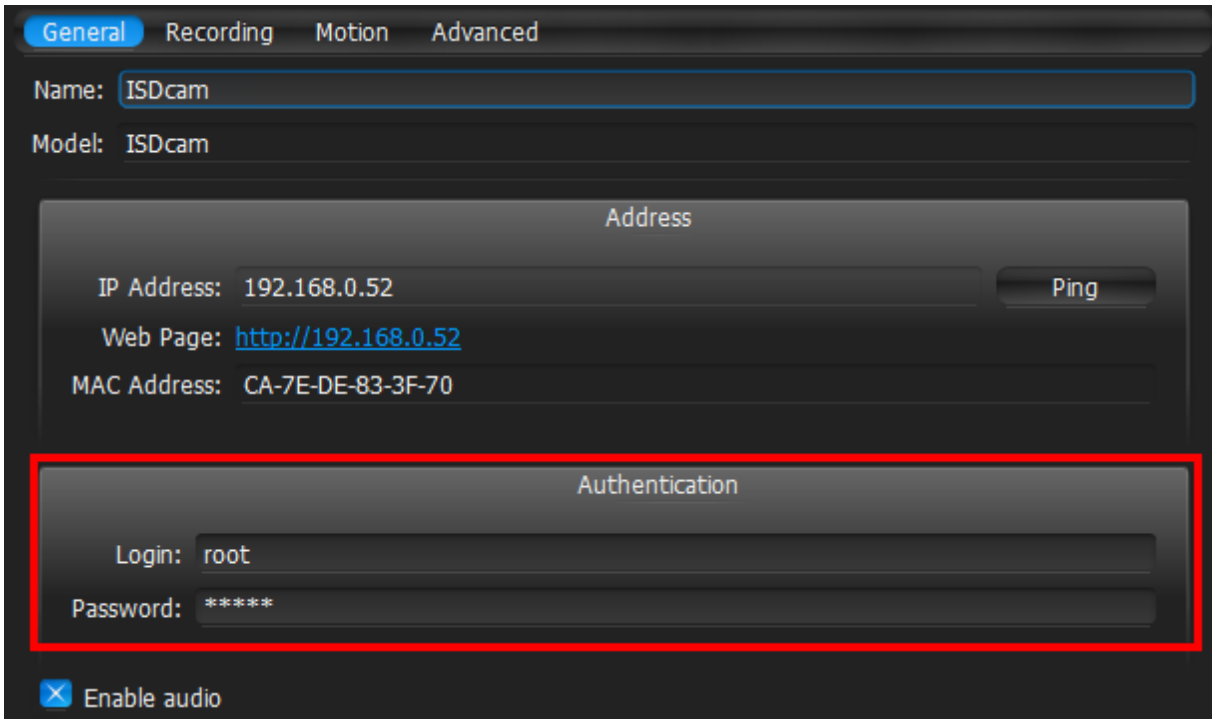
UNAUTHORIZED

Please check authentication information in camera settings.

Note: It is possible to configure **Cameras** for **Administrators** and **Viewers** that have the appropriate **permission** level.

To get **Camera** working it is necessary to setup **Authorization Parameters**:

1. Open Camera Settings and go to *Network*.
2. Enter *Login* and *Password* in the *Authentication* section and click *Apply* or *OK*. To discard changes, click *Cancel*.



IMPORTANT. It is possible to configure same authentication credentials for several cameras simultaneously. See "Setting Same Parameters for Multiple Cameras".

Setting up PTZ

HD Witness provides a smart and intuitive way for setting up **PTZ** on **Cameras**. **PTZ** can be set by either **Administrator** or **Viewer** (a corresponding permission level is required – see "Users Management").

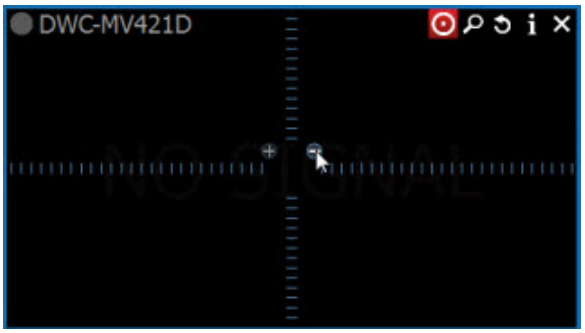
The feature is available if:

- it is supported by the **Camera** model (**Onvif Cameras only**)
- **Camera** is in **Live** mode

If these requirements are met, is displayed on the corresponding camera item.

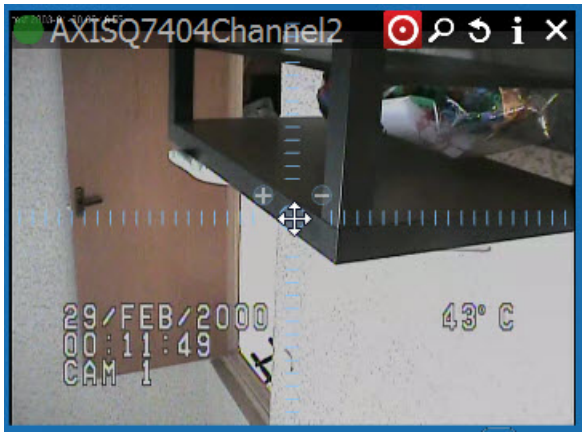
The following PTZ modes are available:

- **Simple** (**Zoom only**). See the following image:



Use **+** and **-** buttons to zoom in/out.

- **Regular** (**Zoom** and **Point**). Refer to the following image:



Use **+** and **-** buttons to zoom in/out. **Left-Click** on the center circle, **Hold Left Mouse Button** and **move the cursor** to move **Camera** to the desired position.

- **Extended** (**Zoom**, **Point and additional features**) . Requires the support for **Absolute Move** from **Camera**. Allows moving and zooming as in previous case, plus:
  - Move to a certain position – **Left Click** to the desired position
  - Zoom to a certain range – Hold **Left Mouse Button** and draw the rectangle to zoom into
  - Full Zoom Out – **Double Click**.

After all settings are configured press once again to hide PTZ controls.

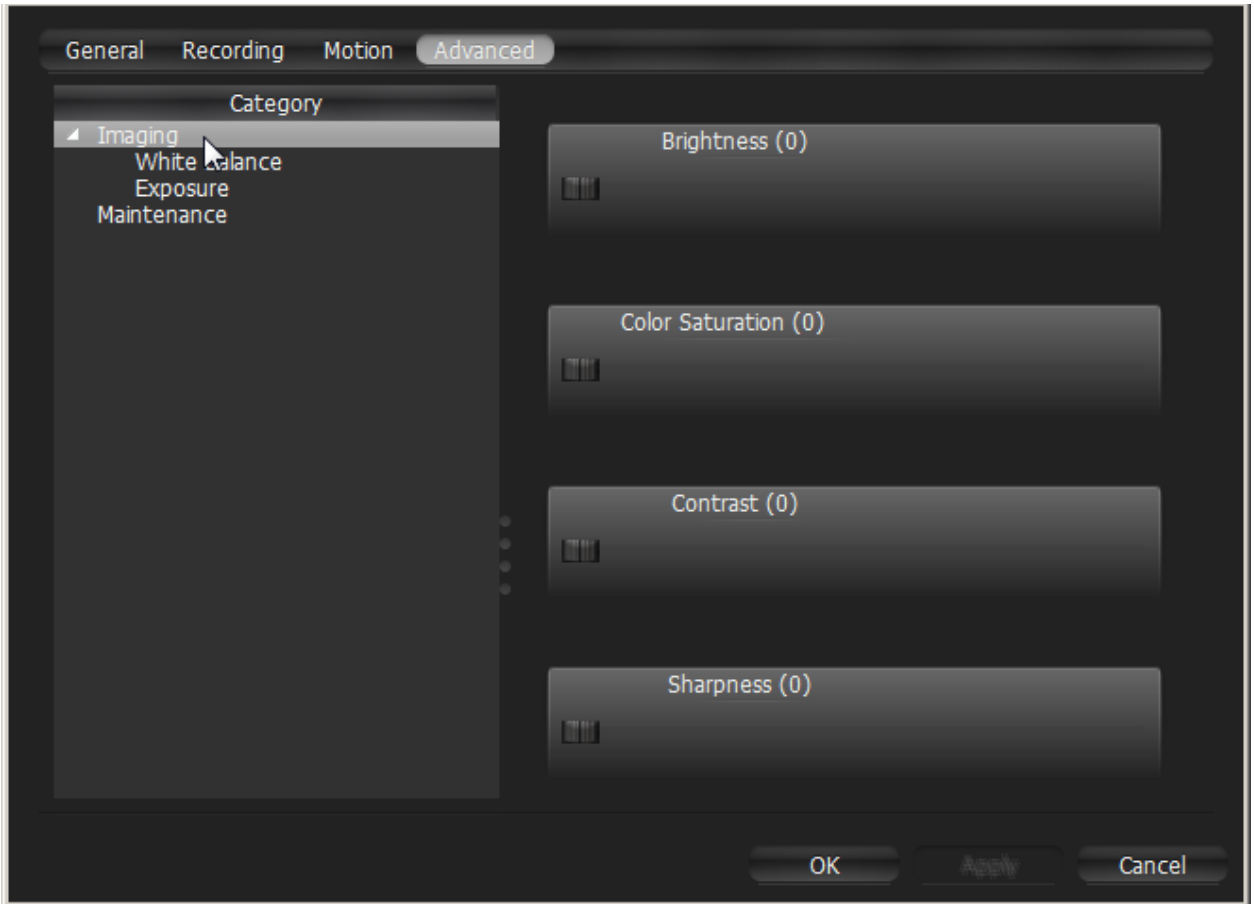
Configuring Proprietary Camera Parameters

HD Witness allows configuring basic image settings inside the software. These settings are available for **Onvif-compliant cameras only.**

Note: It is possible to configure **Cameras** for **Administrators** and for **Viewers** that have the appropriate **permissions**.

To go to proprietary camera settings:

1. Open Camera settings and select *Advanced*.
2. Configure desired **Camera Parameters**:



Note: If the list is empty, Camera does not support configuring (not Onvif-Compliant).

All settings are applied **immediately**. Best practice is to leave a video Item on the **Scene** while configuring its parameters.

Other proprietary camera parameters such as Authorization, Network Settings etc. can be configured directly from camera's web page.

1. Open Camera settings and select *General*.
2. Enter **Authentication Parameters** if the camera requires authentication (Admin only).
3. Click on *Web Page*. The browser will open camera's web page.

Web page may be inaccessible because it can be located on a different network. To check camera accessibility, press the *Ping* button prior to opening the web page.

Additionally, the following can also be performed:

- Resetting Camera.

Resetting Camera

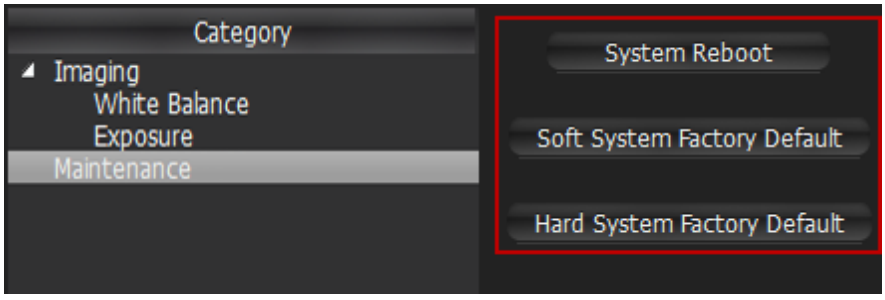
HD Witness allows for cameras to be reset to factory defaults. These settings are available for **Onvif-compliant cameras only**.

Note: It is possible to configure **Cameras** for **Administrators** and **Viewers** with an appropriate **permission** level.

To go to proprietary camera settings:

1. Open Camera settings and select *Advanced*.
2. Go to *Maintenance*.

   Note: If the list is empty, Camera does not support configuring (not Onvif-Compliant).
3. Choose one of the following:
   - *System Reboot* – reboot **Camera** and save settings
   - *Soft System Factory Default* – reboot **Camera** and restore all settings related to the image
   - *Hard System Factory Default* – reboot **Camera** and restore all settings (Network, Authorization, etc).



The reboot is performed instantly once selected.

It is also possible to reboot **Camera** from its **Web Page**. See "Configuring Proprietary Camera Parameters".

Setting up Recording Schedule

To record **Camera**, **Recording Schedule** must be set up first.

Note: It is possible to configure **Cameras** for **Administrators** and **Viewers** with an appropriate **permission** level.

Note: To record one camera, **License** is required. See "Obtaining and Activating HD Witness Licenses (Admin Only)". Even if recording is not performed immediately, the **License** will still be considered as **used**.

The recording schedule specifies the following recording parameters:

- Recording **Type**:
  - **Record Always**
  - **Motion Only** – records only when motion occurs. Motion recording may require for the camera to support motion detection.
  - **Motion + Lo-Res Always** – by default, a camera is set to record at low resolution unless motion occurs, at which point it switches recording to high resolution automatically. High resolution recording requires dual streaming (if supported by camera). See "Dual Stream Recording Specifics (RADASS)"

  Motion Mask and Motion Sensitivity may need to be configured as well (See "Setting up Motion Mask and Motion Sensitivity (see "Setting up Motion Mask and Motion Sensitivity").
- **FPS**
- **Quality**

Note: **FPS** and **Quality** recording settings will affect live stream viewing as well. For example, if **1 FPS** and **Low Quality** are set in the recording schedule, HD Witness will stream live as per selected settings even if the camera is capable of more. If recording is not set, HD Witness will stream live at **Maximum FPS** and **Quality**.

Those settings are applied to **Recording Schedule**. See "Editing Recording Schedule" for details.

See also "Panic Recording".

Dual Stream Recording Specifics (RADASS)

Some **Recording Parameters** may need **Motion** to be supported by the **Camera. Motion + Low Quality Always** recording requires **Dual-Streaming** to be supported by **Camera**.

If **Dual-Streaming** is supported, the second stream settings are set automatically based on the main recording settings:

- 2 to 7 FPS
- 320p to 480p

Not only is the second stream used for recording, it is also used for **Software Motion Detection** and **bandwidth and CPU saving during playback**. See "Setting up Motion Mask and Motion Sensitivity" and "CPU and Bandwidth Saving during Playback (RADASS)".

Editing Recording Schedule

HD Witness provides a powerful and flexible schedule for configuring recording parameters.

A specific date and time can be set in the recording schedule as well.

Examples:

- Workdays 8AM-8PM – record Always, 24 FPS, high quality
- Weekends and Workdays 8PM-8AM – record motion only, 10 fps, low quality

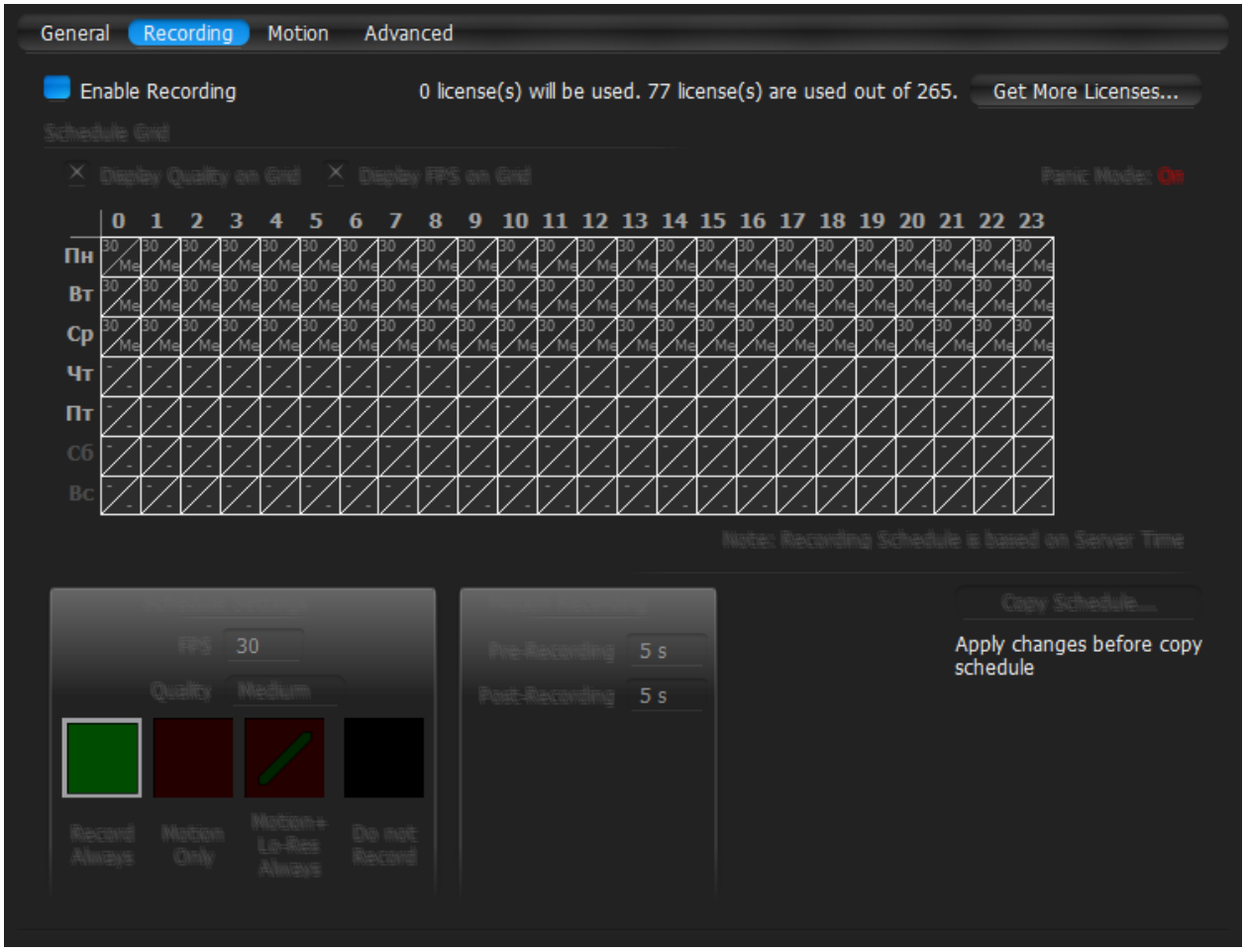
The cameras recorded by Media Servers are marked with a small red circle in Resource Tree:

- ● – camera in recording mode
- ○ – camera recording is setup, though not recording at the moment (a license is still being used)

Note: It is possible to configure **Cameras** for **Administrators** and **Viewers** that have appropriate **permissions**.

To set up **Recording Schedule**:

1. Open Camera Settings and go to *Recording*:



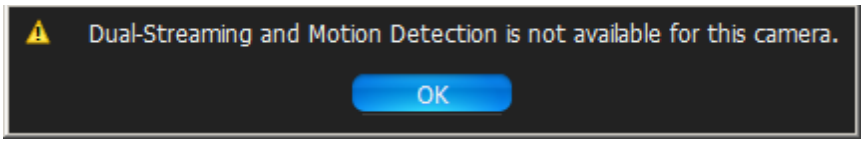
IMPORTANT. If **Media Server** and **Client** are in different time zones the schedile displays **Server Time**.

2. Click *Enable Recording*. Check the number of licenses used. If the number is insufficient, click *Get More Licenses* and proceed with activation.

   Click on *Display FPS on Grid* and *Display Quality on Grid* to show/or hide FPS and quality in grid cells.

3. Select **Recording Mode**:
   - **Record Always**
   - **Motion Only** – recording will start if motion occurs. To specify a range for motion recording, use *Record before motion* and *Record after motion* selectors. Motion detection must be supported by the camera (Software or Hardware).
   - **Motion + Low Quality Always** – low quality stream is recorded always and is switched to high quality streaming once in case of any motion. To use this recording setting, make sure the camera supports dual-streaming.

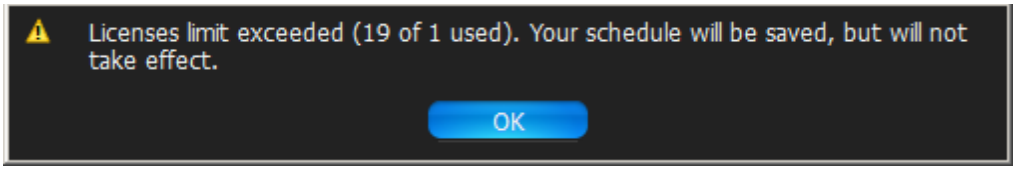
   If not the following will be displayed:

   - **Do not Record**
4. Select **Recording Quality**
5. Select **FPS**
6. As soon as all the parameters are selected, click on **Schedule Grid**:
   - **Click and Drag** to select multiple cells
   - Click on **hour** to select an entire column
   - Click on **weekday** to select an entire row
   - Click **Schedule Grid's** top left corner to select all cells

   Note: to select same values, hold ***Alt*** and click on the cell to choose a recording mode, FPS and values.
7. Repeat to set another recording for different cells
8. If **Motion Recording** is set, it is possible to adjust *Pre-recording* and *Post-Recording* intervals (the time range between the start and end of motion recording).
9. Click *Apply* or *OK* when finished. To discard changes, click *Cancel*.

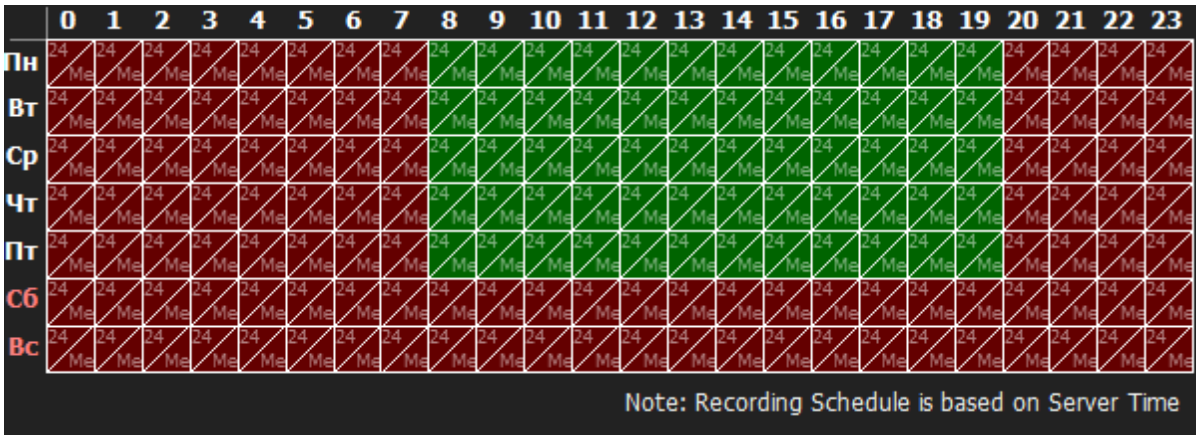
   In case of insufficient licenses, the following warning will appear:

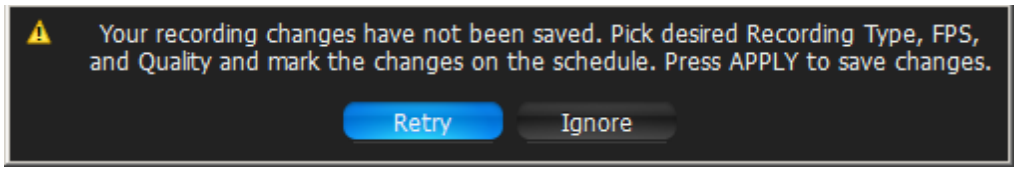
   Enable Recording flag will be disabled; however, all schedule settings will be saved.

Example:

- Workdays 8AM-8PM – Record Always, 24 FPS, High
- Workdays 8PM-8AM – Motion + Low Quality Always, 24 FPS, Medium
- Weekends – record motion only, 10 fps, Low



IMPORTANT. Make sure to apply all recording selections to the schedule once selected (recording type, FPS and quality). The following message will appear in case the selection is not applied.


Your recording changes have not been saved. Pick desired Recording Type, FPS, and Quality and mark the changes on the schedule. Press APPLY to save changes.
Retry
Ignore

Panic Recording

This feature allows switching **Recording Settings** for all **Cameras** to **highest available FPS and Quality**. This feature can be activated by **any User.**

Note: if Recording is **not enabled** for **Camera**, **Panic Recording will not be activated.**

To activate **Panic Recording**, press PANIC located in the top right corner.

Current **Panic Recording** status can be viewed:

- on the Panic button – becomes red if panic recording is on (PANIC)
- on Recording Schedule (see "Editing Recording Schedule")
- in server's settings (see "Obtaining and Configuring Media Server's Additional Settings (Admin Only)")

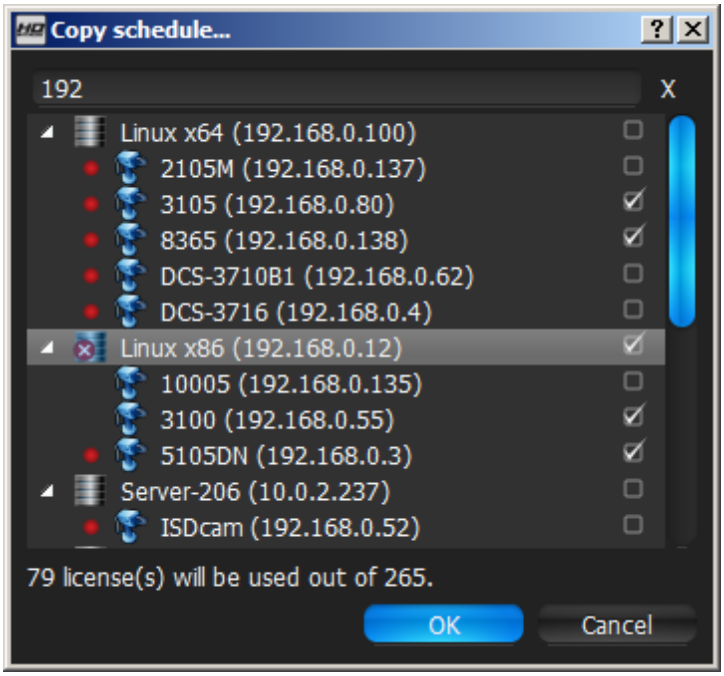
To stop panic recording, press PANIC again. The recording settings will reset to the values previously specified.

Copying Recording Schedule from one Camera to Others

If **Recording Schedule** is already set up on **Camera** it may be needed to copy the settings to a different one. HD Witness. For instance, if a new camera is plugged in it is much more convenient than set up a schedule separately.

To copy Recording Schedule:

1. Open **Camera** the schedule should be copied from, go to Camera Settings -> *Recording*:
2. Click on the *Copy Schedule* button. The following form will be opened:



3. Check desired **Cameras** the schedule should be copied to. To select all **Cameras** on specific **Server** check it. To filter search use the *Filter* box. Filter criteria is the same as search (see "Search").

   Note: additional **Licenses** may be needed. One license is used for recording single **Camera**. See "Obtaining and Activating HD Witness Licenses" for details.

4. Click *Apply* or *OK* when finished. To discard changes, click *Cancel*.

Setting up Motion Mask and Motion Sensitivity

In order to detect motion more properly and accurately, HD Witness provides a powerful and flexible **Motion Detection** configuration. For example, if a camera is pointed at a parking lot, motion mask can be set on all the surrounding areas that are not targeted for recording. In this case, any motion appearing in the areas surrounding the main target area, will not trigger motion detection and recording.

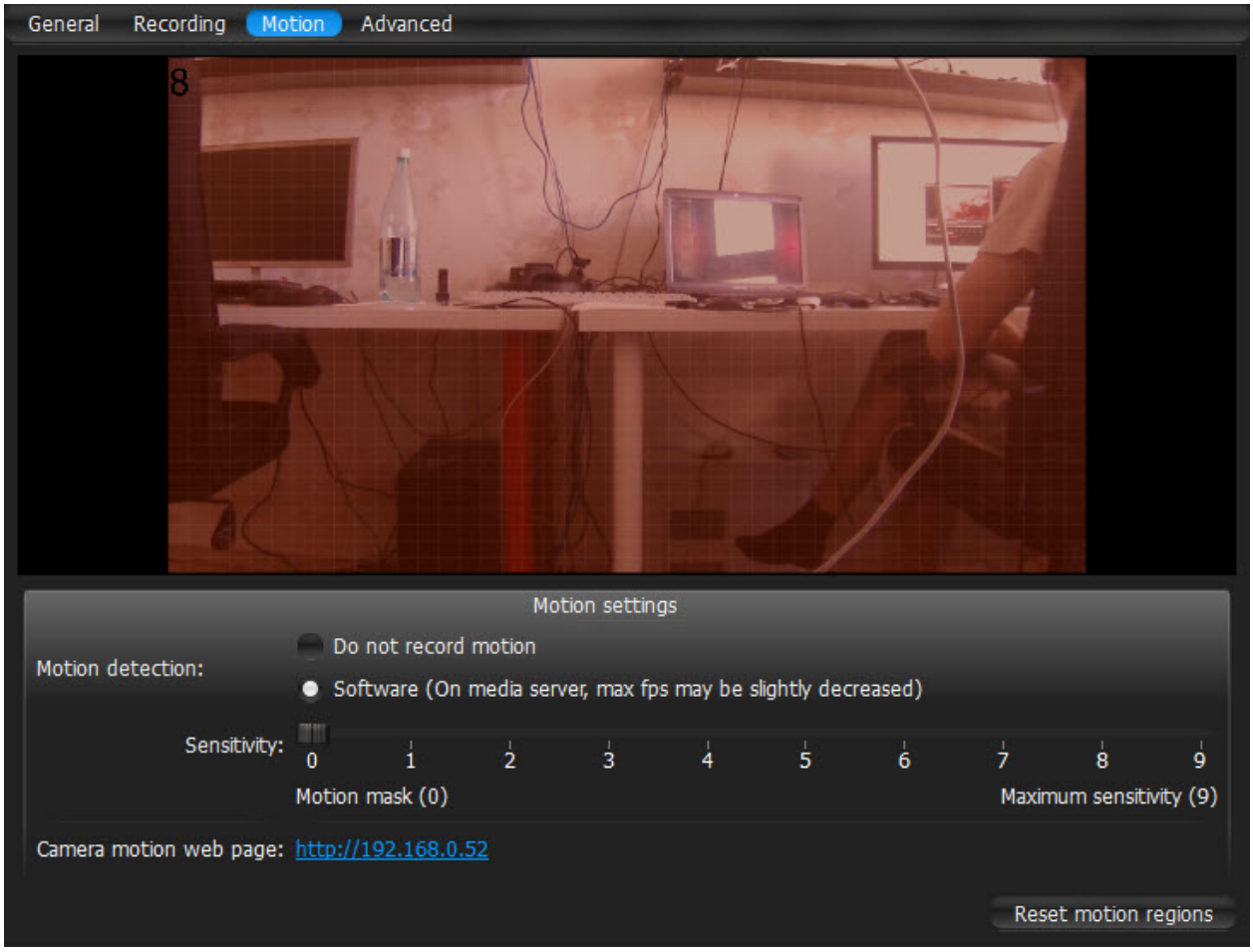
IMPORTANT. This particular feature in HD Witness works only if the selected camera supports **Motion Detection**.

The following **Motion Detection** types are supported:

- **Hardware Motion Detection** – implemented on **Cameras** directly. In this case only motion mask can be configured. To configure additional parameters it may be necessary to go to **Camera Settings web page (**see "Configuring Proprietary Camera Parameters"). For **Arecont Vision** this mode is set **automatically**.
- **Software Motion Detection** is performed on **Media Server**. It consumes more resources, though it provides better and more flexible motion detection. In this case, it is possible to set up unlimited number of motion regions and adjust its sensitivity. **Software Motion Detection** requires **Dual-Streaming** supported by **Camera**. If supported, **Software Motion Detection** is set **automatically** (excluding **Arecont Vision** cameras).

To set up **Motion Detection:**

1. Open Camera Settings and go to *Motion*:

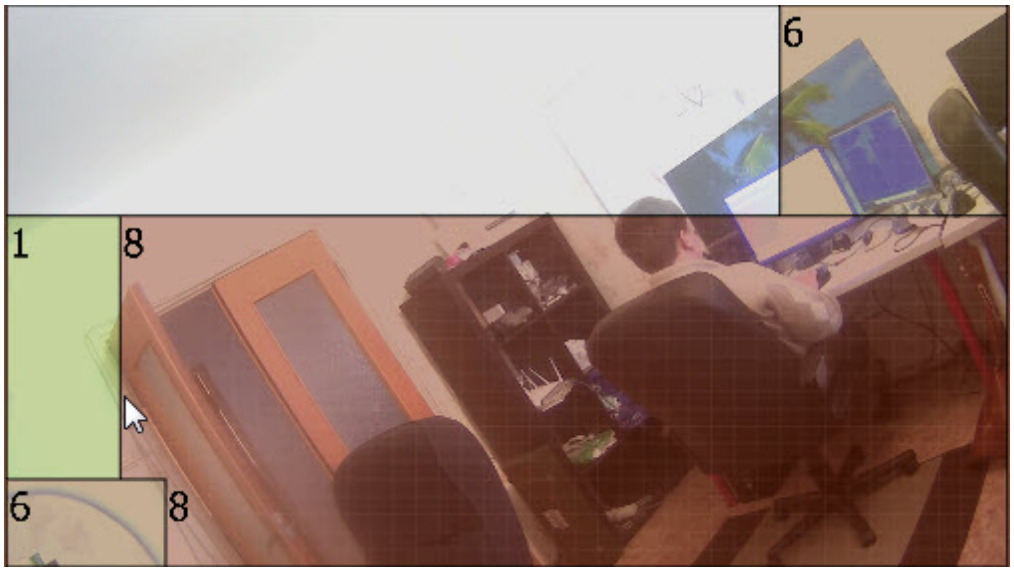


   If red zones appear on the grid during motion, **Motion Detection** is supported. Red cells indicate the level of motion (the higher the motion level, the brighter the cells).

2. Select the type of motion detection (**Hardware** or **Software**). If none are active, the camera does not support Motion Detection at all.
3. Select *Sensitivity* on the slider. **0** is motion mask (minimal sensitivity, motion will not be detected on the selected region); **9** is the highest sensitivity.

4. Select the desired regions the sensitivity will be applied to:
   - **Click and Drag** to select a single region
   - **Ctrl** + **Click and Drag** to add another region
   - **Click** on a region to fill it with desired sensitivity

   To set **Motion Mask** just **Click and Drag**. There is no need to adjust *Motion Sensitivity*.
5. Repeat for each desired sensitivity. Use *Reset Motion Regions* to start over.



The above picture illustrates the following:

- the area marked in grey will not capture motion (**Motion Mask**)
- the green area will capture motion with very low sensitivity
- top right and bottom left corners will capture motion with standard sensitivity
- for other regions, the sensitivity will be high.

6. Click *Apply* or *OK* when finished. To discard any changes, click *Cancel*.

It is possible to set up motion directly from camera's web page. For this purpose, use *Camera Motion Web Page* link on the *Motion* tab.

Setting Same Parameters for Multiple Cameras

In order to simplify the configuration process, HD Witness enables users to apply same parameters to more than one camera at a time.

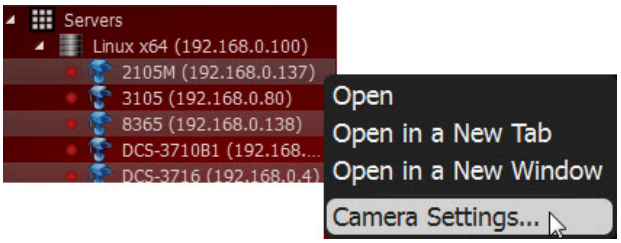
The following can be performed as a batch:

- **Authentication** setup
- **Schedule** configuration

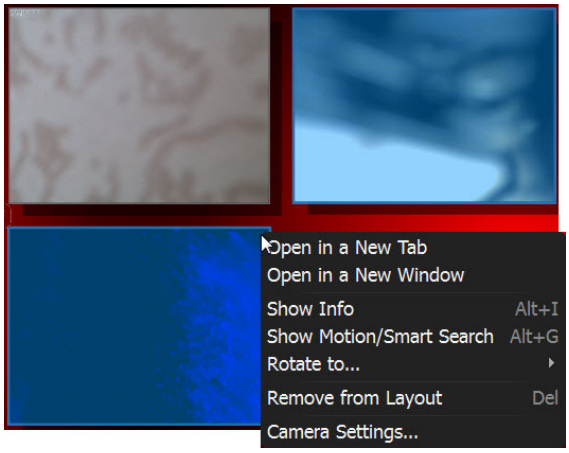
To set the same parameters for multiple **Cameras**:

1. Use Multi-Selection to select desired cameras:
   - In Resource Tree, hold ***Ctrl*** or ***Shift*** and **Click**
   - On **Scene** – use ***Ctrl*** and **Click**
2. Open Context Menu and go to *Camera Settings*.

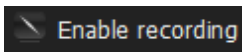
From Resource Tree:



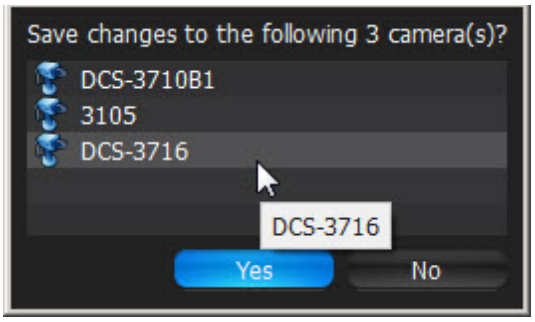
From **Scene**:



- If the selected cameras share the same **Authentication Credentials**, they will be displayed.
- If the selected cameras share the same **Recording Settings**, they will be displayed.
- If the selected cameras have different *Enable recording* field values, the field will be displayed as follows:



3. Set the desired parameters and click Apply.
   - If needed, a user can add a camera to the selection by holding the ***Ctrl*** button and clicking on the desired camera in Resource Tree.
   - To set up another camera(s), select the desired camera in Resource Tree. It is not necessary to close the settings dialog.
   - If the changes are not applied, the following warning message will appear:



4. When finished, press *OK* to apply or *Cancel* to discard settings.

Swapping Cameras between Media Servers (Admin Only)

If too many cameras are used on the network, it may be helpful to set up an additional server for load balancing and redundancy purposes. If several servers are set up on the same network, it is possible to perform **manual load-balancing**.

This is how camera swapping works:

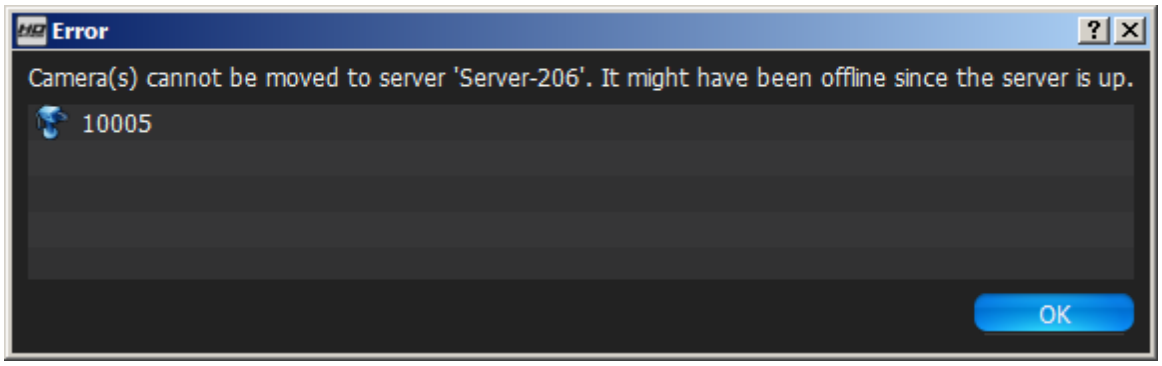
1. Step 1: **Media Server** is connected to **EC** and starts discovering **Cameras**. As soon as **Cameras** are discovered, they will appear in the **Client**.
2. Step 2: **Media Server** is connected to **EC** and starts discovering **Cameras**. As soon **Cameras** are discovered, their **MAC Addresses** are checked. If **Camera** is registered on **Media Server**, it will not appear in the **Client** and a "**Disabled**" flag is set in the database.
3. Once **Camera** is moved to another **Media Server**, it becomes **Enabled** in the second **Media Server** and automatically disables itself in the first one.

IMPORTANT. When moving **Camera** from one **Media Server** to another, recording will be restarted automatically (with predefined parameters). Also, **Archive** is seamlessly **combined** from all servers.

To move camera(s) from one server to another:

1. Hold ***Ctrl*** or ***Shift*** to select the desired cameras in Resource Tree
2. **Drag and drop** the selected cameras to the desired server

IMPORTANT. In order to move **Camera** from one **Media Server** to another, the cameras must be discovered by both servers. If not, the following warning will appear:

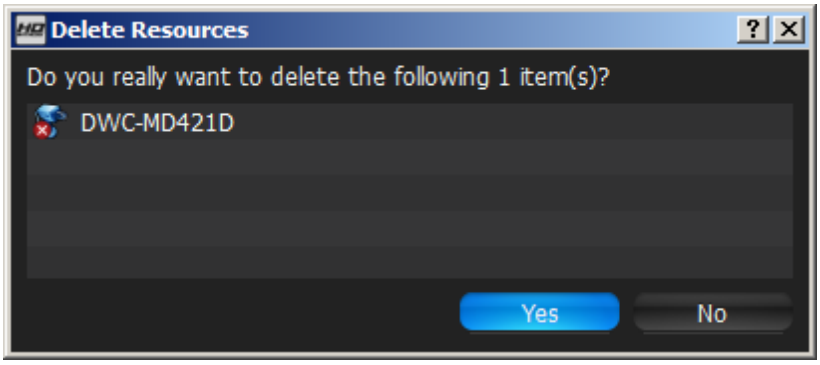


Deleting Cameras (Admin Only)

IMPORTANT. **Camera must be offline** (unplugged from the network) to be deleted.

To delete **Camera**(s):

1. Expand the **Media Server** hosting the desired server in Resource Tree.
2. Find and select **Camera**.
3. **Right-Click** for Context Menu and choose *Delete* (or the ***Del*** button on a keyboard).
4. Click *Yes* to confirm.



If **Camera** is back online, it will start working **immediately**. Recorded archive will be available as well; however, a user will need to reconfigure **Camera** as its settings have been erased.

Configuring Events and Actions (Admin Only)

HD Witness provides powerful and flexible event bus than can be used for simple and intuitive programming of any algorithm.

Algorithms are a set of **Rules**. Each **Rule** is a combination of **Event**-**Action**. As soon as **Event** is fired up, HD Witness triggers the appropriate **Action**.

The following events and actions are supported:

Events:

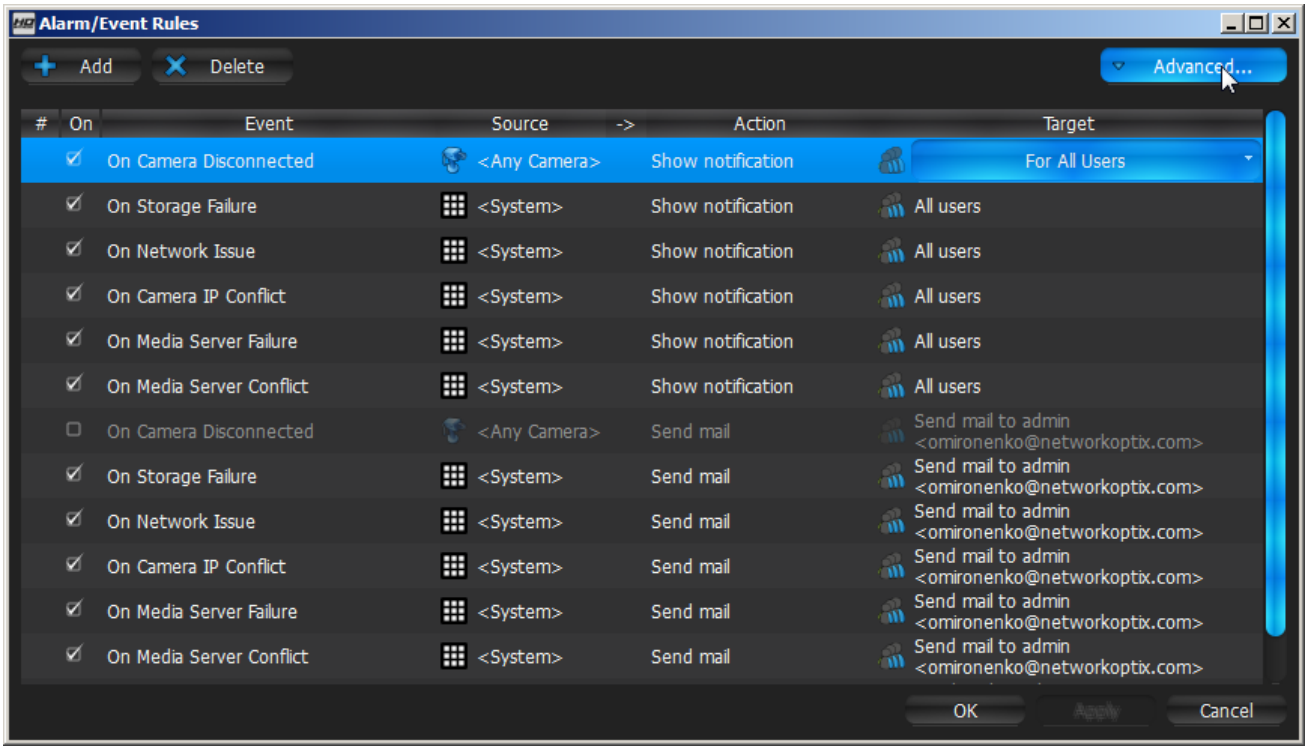
- Motion on Camera
- Camera Disconnection/Malfunction
- Storage Failure
- Network Issue
- Camera IP Conflict
- Input Signal on Camera
- Media Server Failure
- Media Servers Conflict
- EC Connection Lost
- Licenses are Not Configured
- E-mail is Not Set for Users
- Storages Misconfiguration.

Actions:

- Notifications
- Mail Notifications
- Start Recording on Camera
- Start Panic Recording
- Trigger Camera Output.

To configure **Rules**:

1. Open Main Menu and go to *Alarm/Event Rules* (or press ***CTRL + E***). The following dialog will be opened:



IMPORTANT. Some default rules are already configured. See "Default Rules" for details.

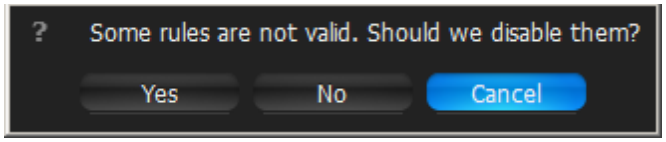
2. To add a new **Rule**, click *Add.* To delete an existing-one, click *Delete*.

3. Once added, **Rule** should be configured.
   - Select **Event** on the left-hand side that needs to be monitored. See "Events that HD Witness Can Track" for more information
   - Select **Action** on the right-hand side that needs to be performed once **Event** occurs. Refer to "Actions that HD Witness Can Do" for details
   - Specify basic parameters for **Event** and **Action**. Click on *Source* or *Target* column in the **Rule** row and choose the desired value.

   IMPORTANT. If some fields are missing or incorrect, **Rule** is considered invalid. In this case, it will turn red:

   - If any additional configuration is needed, click *Advanced...* The advanced settings will be displayed on the bottom. Those settings differ from each other depending on **Events**/**Actions** that are being configured. See this chapter for more information on a specific **Event**/**Action**.
   - Add *Comments* for **Rule** if needed.
4. Set or clear the flag (on the left-hand side of each **Rule**) to enable or disable it.
5. As soon as all configurations are done, click *Apply* to accept changes or *Cancel* to discard. Click *OK* to apply changes and close the form.

IMPORTANT. If any **Rule** is considered invalid, the warning displayed below will appear. If apply the changes, incorrect **Rules** will be disabled.



Events that HD Witness Can Track

HD Witness can react as soon as a particular **Event** occurs.

Every tracked event may have its own parameters. Refer to the particular **Event** description for more information:

- Motion on Camera
- Camera Disconnection/Malfunction
- Storage Failure
- Network Issue
- Camera IP Conflict
- Input Signal on Camera
- Media Server Failure
- Media Servers Conflict
- EC Connection Lost
- Licenses are Not Configured
- E-mail is Not Set for Users
- E-Mail Server is not Configured
- Storages Misconfiguration
- Storage is Full.

As soon as Event occurs, the **Action** can be performed. See "Actions that HD Witness Can Do".

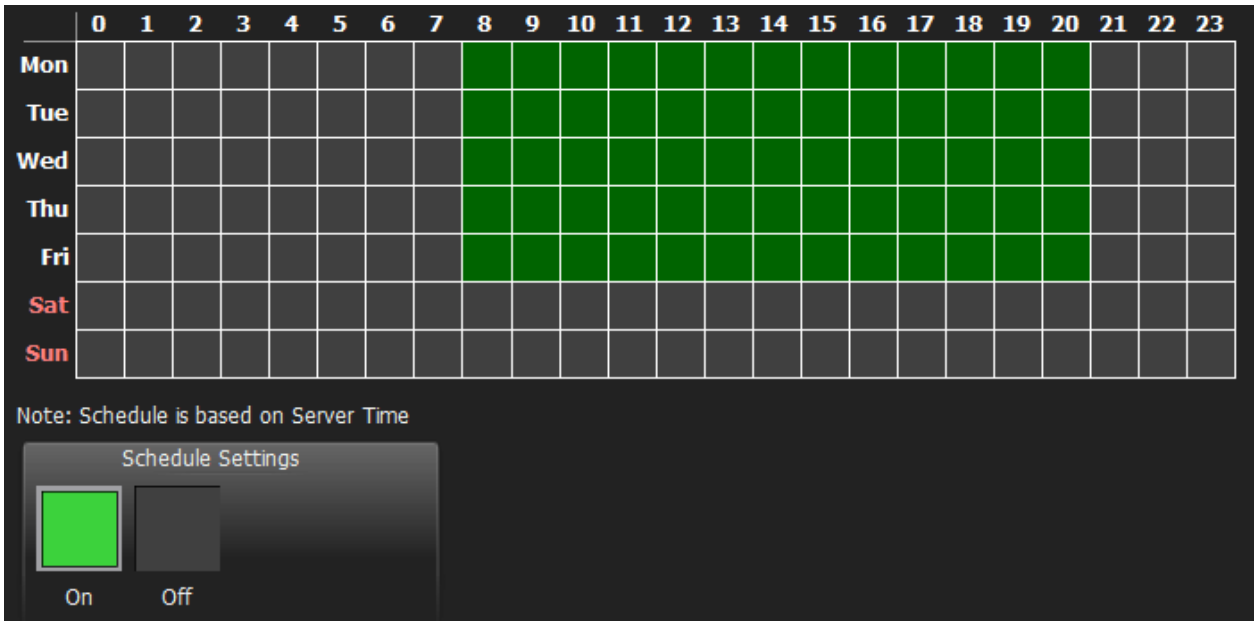
Additionally, **Events** can be tracked based on the schedule. For instance, Motion can be tracked only on weekends and Input Signal – at 8PM-8AM. See "Setting up Schedule for Tracking Events" for details.

Setting up Schedule for Tracking Events

Events can be tracked based on the schedule. For instance, Motion can be tracked only on weekends and Input Signal – at 8PM-8AM. See "Setting up Schedule for Tracking Events" for details.

The schedule can be configured as advanced parameters for the desired **Event**:

1. Open **Event's** Advanced Parameters by clicking on *Advanced* on the *Alarm/Event Rules* form. The advanced settings will be displayed on the bottom.
2. Click on *Schedule...* The following form will be displayed:



3. Select *On* or *Off* to enable/disable monitoring in particular cells.
4. Click on **Schedule Grid**:
   - **Click and Drag** to select multiple cells
   - Click on **hour** to select an entire column
   - Click on **weekday** to select an entire row
   - Click **Schedule Grid's** top left corner to select all cells

The above example shows that the event is tracked on workdays (Sun-Fri) since 8AM till 8PM.

By default, events are always tracked.

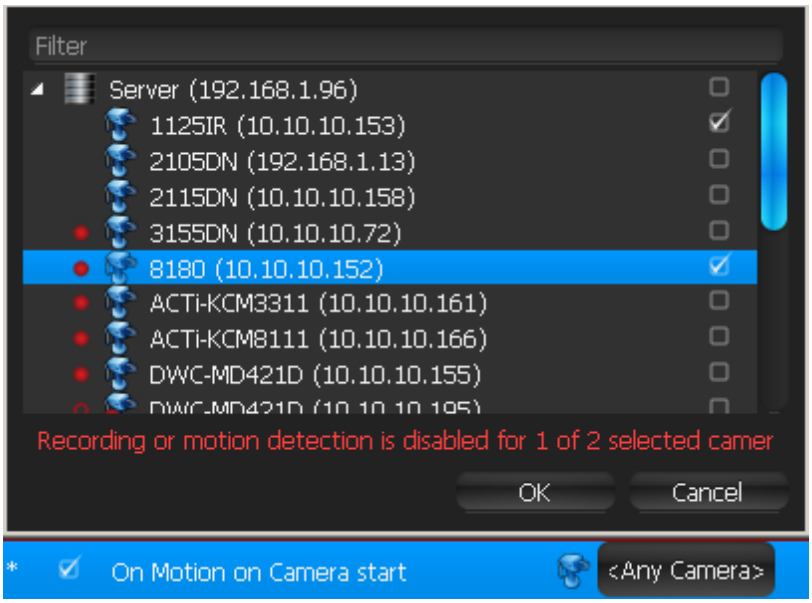
Motion on Camera

Occurs if motion is detected on **Camera(s)**.

Basic Parameters

Camera(s) motion is detected on. To specify:

1. Click on *Any Camera* at the desired row on the Alarm/Event Rules form. The following form will appear:



2. Check the cameras to detect motion, then click *OK* (*Cancel* will discard changes).

To select all **Cameras** on a specific **Server**, set the flag on it. To filter search, use the *Filter* box. Filter criterias are the same as search (see "Search"). It is possible to **Drag'n'Drop** the selected **Cameras** from Resource Tree onto the **Event**'s advanced settings form.

IMPORTANT. To detect motion, recording must **be enabled** on **Camera**. Refer to "Editing Recording Schedule" for information on how to enable recording. If the selected **Camera** is not being recorded, then the corresponding message will be displayed (see above).

If cameras are not specified, motion will be detected on all the cameras that support it.

Advanced Parameters

Schedule (see "Setting up Schedule for Tracking Events").

Starts/Stops. Available only for instant actions (Send Mail, Show Notification, Camera Output). If no motion occurs for 3 seconds, the current motion **Event** is considered stopped. When motion occurs again, a new motion **Event** is generated.

May result in

Camera Recording.

Panic Recording.

These actions are performed while motion is taking place on at least one camera out of the selected.

Send Mail.

Show Notification.

Camera Output.

These actions will be performed if motion is detected on at least one camera out of the selected.

Why Event may work incorrectly

Recording is disabled for **Camera(s)** that are being monitored. Refer to "Editing Recording Schedule" for information on how to enable recording for **Camera**.

Motion Mask is not set properly. See "Setting up Motion Mask and Motion Sensitivity".

Too many **Cameras** are monitored and too many **Events** occur.

Cameras that are monitored are offline.

Action is not configured properly. See the **Action**'s description for details.

Camera Disconnection/Malfunction

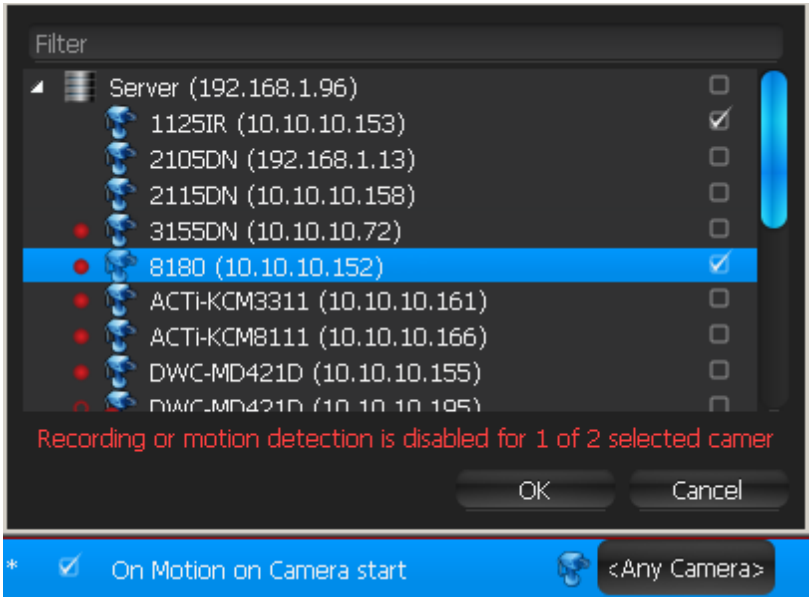
Occurs if **Camera(s)** is/are disconnected for whatever reason (network, **Camera** malfunction etc.). **Camera** is considered disconnected if no data is received for 10 seconds. Once data is received from **Camera**, the status is automatically changed back to Online. Additional **Events** may occur as well and may help to investigate the issue:

- Network Issue. This means that network is unable to transfer data between **Camera** and **Media Server**, which may be the reason why a camera goes offline.
- Media Server Failure. If **Media Server** is down, all hosted **Cameras** drop offline.
- Camera IP Conflict. If another **Camera** with the same IP enters the network, one of these two **Cameras** will go offline.
- Media Servers Conflict. If a new **Media Server** is connected to another **Enterprise Controller** on the same network and pulls data from the same **Cameras**, then some **Cameras** may drop offline because they may not provide several streams simultaneously.

Basic Parameters

Camera(s). To specify:

1. Click on *Any Camera* at the desired row on the Alarm/Event Rules form. The following form will appear:



2. Check the cameras to track, then click *OK* (*Cancel* will discard changes).

To select all **Cameras** on a specific **Server**, set the flag on it. To filter search, use the *Filter* box. Filter criteria are the same as search (see "Search"). It is possible to **Drag'n'Drop** the selected **Cameras** from Resource Tree onto the **Event**'s advanced settings form.

If **Cameras** are not specified, all **Cameras** will be monitored.

Advanced Parameters

Schedule (see "Setting up Schedule for Tracking Events").

May result in

Send Mail.

Show Notification.

Camera Output.

Why Event may work incorrectly

Too many **Cameras** are monitored and too many **Events** occur.

Cameras being monitored are offline.

Action is not configured properly. See the **Action**'s description for details.

Storage Failure

Occurs if **Media Server** is unable to write data on one or more **Storages**. This may be caused by the following:

- Hard disk malfunction.
- Insufficient rights. The permission to write on disk or recorded folder may be restricted by the computer Administrator.
- Hard disk is too slow: too many cameras are recorded and hard disk cannot record on such speed. It may be useful to add another hard disk drive.

If no **Storages** are selected to write to, Storages Misconfiguration is fired up.

Basic Parameters

None

Advanced Parameters

Schedule (see "Setting up Schedule for Tracking Events").

Network Issue

Occurs if network is unable to transfer data between **Camera** and **Media Server** and packet loss is detected. That may cause for frame rate to drop on **Camera**(s). If no frames are received from **Camera** for 10 seconds, **Camera** is considered offline. Camera Disconnection/Malfunction event is then generated in this particular case.

Basic Parameters

None

Advanced Parameters

Schedule (see "Setting up Schedule for Tracking Events").

Camera IP Conflict

Occurs If another **Camera** with the same IP has entered the network, resulting in one of these two **Cameras** to go offline. Camera Disconnection/Malfunction event is then generated in this particular case.

Basic Parameters

None

Advanced Parameters

Schedule (see "Setting up Schedule for Tracking Events").

Input Signal on Camera

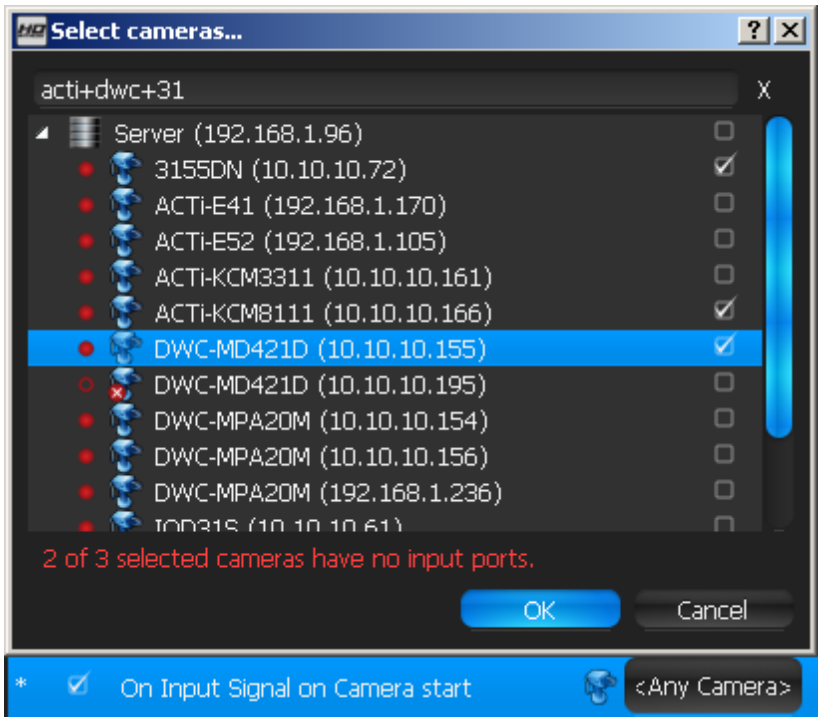
Occurs if input signal is detected on **Camera(s)**. HD Witness may detect input signals on the following cameras:

- ONVIF-compliant (input support via ONVIF may vary from camera to camera)
- Axis.

Basic Parameters

Camera(s) the input signal is detected on. To specify:

1. Click on *Any Camera* at the desired row on the Alarm/Event Rules form. The following form will appear:



2. Check the cameras to detect input, then click *OK* (*Cancel* will discard changes).

To select all **Cameras** on a specific **Server**, click on the check box. To filter search, use the *Filter* box. Filter criteria are the same as search (see "Search"). It is possible to **Drag'n'Drop** the selected **Cameras** from Resource Tree onto the **Event**'s advanced settings form.

IMPORTANT. To detect input signals, input must be supported on **Camera**. If the selected **Camera** does not support input, then the corresponding message will be displayed (see above).

If do not specify the particular cameras, then input signal will be detected on all the cameras that support input.

Advanced Parameters

Schedule (see "Setting up Schedule for Tracking Events").

Starts/Stops. Available only for instant actions (Send Mail, Show Notification, Camera Output).

May result in

Camera Recording.

Panic Recording.

These actions will be performed while input signal is taking place on at least one camera out of the selected.

Send Mail.

Show Notification.

Camera Output.

These actions will be performed once input signal is detected on at least one camera out of the selected.

Why Event may work incorrectly

Motion is not supported on **Camera(s)** that is being monitored.

Too many **Cameras** are monitored and too many **Events** occur.

Cameras that are being monitored are offline.

Action is not configured properly. See the **Action**'s description for details.

Media Server Failure

Occurs if **Media Server** is down (either hardware/software issue or manual shutdown). In this case, all hosted on **Media Server Cameras** are dropped offline.

Basic Parameters

None

Advanced Parameters

Schedule (see "Setting up Schedule for Tracking Events").

Media Servers Conflict

Occurs if a new **Media Server** is connected to another **Enterprise Controller** on the same network and pulls data from same **Cameras**. In this case, some **Cameras** may drop offline because they may not provide several streams simultaneously. This results in Camera Disconnection/Malfunction **Event**.

Basic Parameters

None

Advanced Parameters

Schedule (see "Setting up Schedule for Tracking Events").

EC Connection Lost

Occurs if connection to **Enterprise Controller** is lost for whatever reason (network issue or EC is down). In this case, the connection icon in the top right corner becomes red ( ) and Notification is displayed in the bottom right corner:

If **User** clicks *Fix*, then login dialog will automatically open. See "Connecting to Enterprise Controller and Working Offline".

This notification will hide automatically as soon as the connection is restored.

Why Event may work incorrectly

This type of **Event** is hidden in system settings. See "Disabling and Enabling Specific Notifications" for more details.

Licenses are Not Configured

Occurs if no Licenses are activated. In this case, Notification is displayed in the bottom right corner:

In this case, it is not possible to record **Cameras** and view **Analog Cameras**.

If **User** clicks *Fix*, then license dialog will automatically open. See "Obtaining and Activating HD Witness Licenses".

This notification will hide automatically as soon as one **License** is activated.

Why Event may work incorrectly

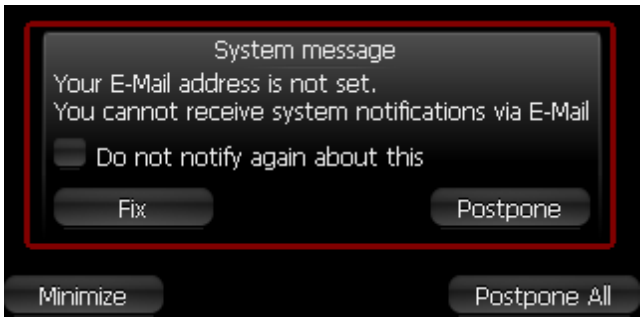
This type of **Event** is hidden in system settings. See "Disabling and Enabling Specific Notifications" for more details.

E-mail is not Set for Users

Occurs if E-Mail address is not set up:

- **Viewer** is notified if an email address is not configured.
- **Administrator** is notified if a **User** does not have an email address specified.

In this case, Notification will be displayed in the bottom right corner:



If click *Fix*, **User's** mail settings dialog will open. See "Changing User Settings".

If **User** does not have an e-mail address, that user is unable to receive mail notifications.

This notification will hide automatically as soon as all email addresses are configured (for Admin) or individual email address is set (Viewer).

Mail Notifications may not work if E-Mail Server is not configured. In this case, Error while Sending E-Mail notification will appear.

Why Event may work incorrectly

This type of **Event** is hidden in system settings. See "Disabling and Enabling Specific Notifications" for more details.

E-Mail Server is not Configured

Occurs if E-Mail Server is not configured. In this case, Notification is displayed in the bottom right corner:

If E-Mail Server is not configured, mail notifications cannot not be sent.

If click *Fix*, Mail Server settings dialog will open. See "Mail Notifications" for details.

This notification will hide automatically as soon as all E-Mail Server parameters are configured.

Mail Notifications may not work if E-mail is Not Set for Users. In this case, Error while Sending E-Mail notification will appear.

Why Event may work incorrectly

This type of **Event** is hidden in system settings. See "Disabling and Enabling Specific Notifications" for more details.

Error while Sending E-Mail

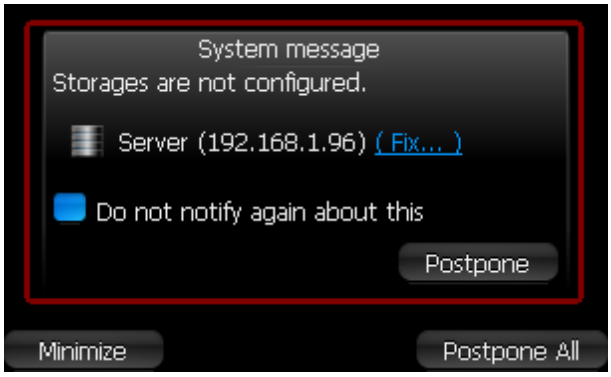
Occurs when E-Mail Notification fails. In this case, Notification is displayed in the bottom right corner.

If click *Fix*, Mail Server settings dialog will open. See "Mail Notifications" for details.

Storages Misconfiguration

Occurs if no **Storages** are selected (recording flag might have been removed accidentally).

In this case, Notification is displayed in the bottom right corner:



If **Storages** are not configured, it is not possible to record **Cameras**.

If click *Fix*, storage configuration dialog will open. See "Configuring Media Server Storages (Admin Only)".

This notification will hide automatically once **Storage** has a recording flag set up.

Why Event may work incorrectly

This type of **Event** is hidden in system settings. See "Disabling and Enabling Specific Notifications" for more details.

Storage is Full

Occurs due to insufficient disk space at any partition (less than 100 Gb and all other space is consumed by data not related to HD Witness video archive). In this case, it is not possible to record **Cameras**.

Notification is displayed in the bottom right corner:

If a user clicks *Fix*, storage configuration dialog will open. See "Configuring Media Server Storages (Admin Only)".

This notification will disappear automatically as soon as at least one **Storage** has a recording flag set up.

Why Event may work incorrectly

This type of **Event** is hidden in system settings. See "Disabling and Enabling Specific Notifications" for more details.

Actions that HD Witness Can Do

HD Witness reacts differently to each **Event**. The result is called **Action**. Each Action that is fired up by the software may have its own parameters. Refer to the particular **Action** description for more information:

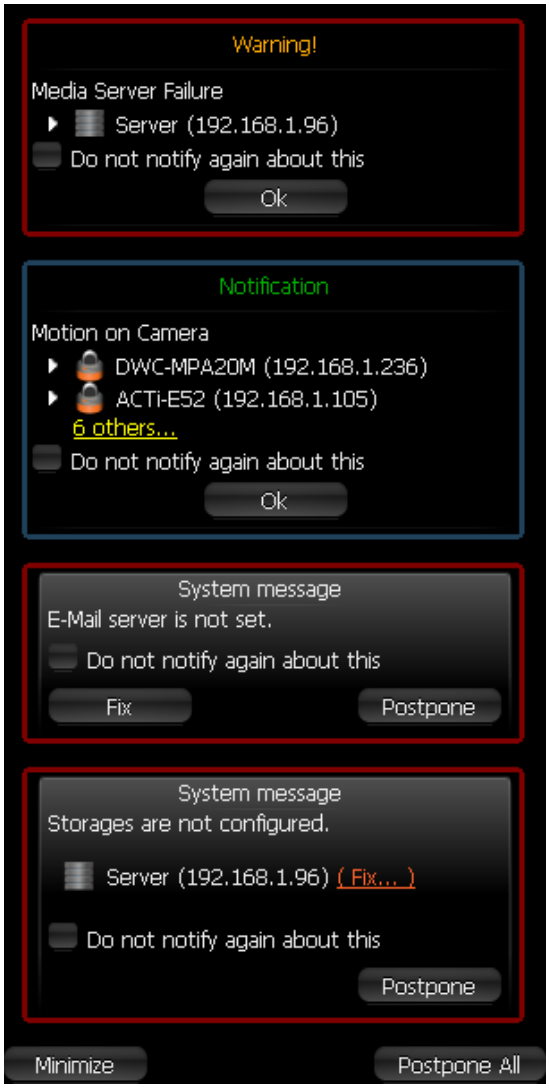
- Notifications
- Mail Notifications
- Start Recording on Camera
- Start Panic Recording
- Trigger Camera Output.

See "Events that HD Witness Can Track" for detailed information on **Events**.

Notifications

HD Witness provides a powerful notification mechanism for notifying **Users** of **Events** that occur. When **Event** occurs, the following icon appears in the bottom right corner:

If **User** clicks on this icon, multiple notifications will appear:



Notifications Types:

- **System Messages** – something is not properly configured. Can be fixed
- **Warnings** – critical **Event** (**Camera** disconnected, **Media Server** failure, etc)
- **Notifications** – non-critical events (motion, input signal, etc)

It is possible to do the following:

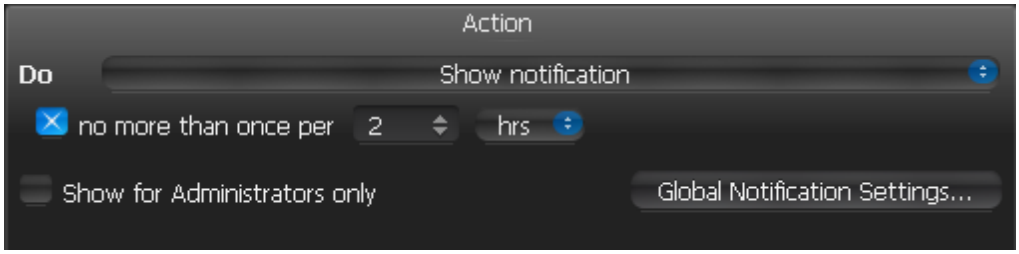
- Fix issues related to System Messages. Click *Fix* on the particular notification
- Postpone the issue related to System Messages. Click *Postpone* on the related notification
- Close the issue related to Warnings/Notifications. Click *OK* on the corresponding notification. It will disappear and pop only when the event occurs again
- Minimize all notifications. Click *Minimize*. All notifications will disappear. A red exclamation point will be displayed. If a user clicks on this icon, the notifications will reappear
- Postpone all notifications. Click *Postpone all*. All notifications will disappear and pop only when the event occurs again
- Hide notifications of this particular type. Check *Do not notify again about this* and click *Postpone* or *OK*. It will disappear and will never pop again.

Basic Parameters

Users the notification should be displayed to:

- All users
- Administrators only.

Advanced Parameters



No more than once per ... – if checked, the notification will not pop if occurred more than once in the specified period of time.

May be caused by

All **Events**.

Why Action may work incorrectly

Notifications of some types are disabled. Refer to "Disabling and Enabling Specific Notifications" for more information.

Event is not configured properly. See the **Event**'s description for details.

Disabling and Enabling Specific Notifications

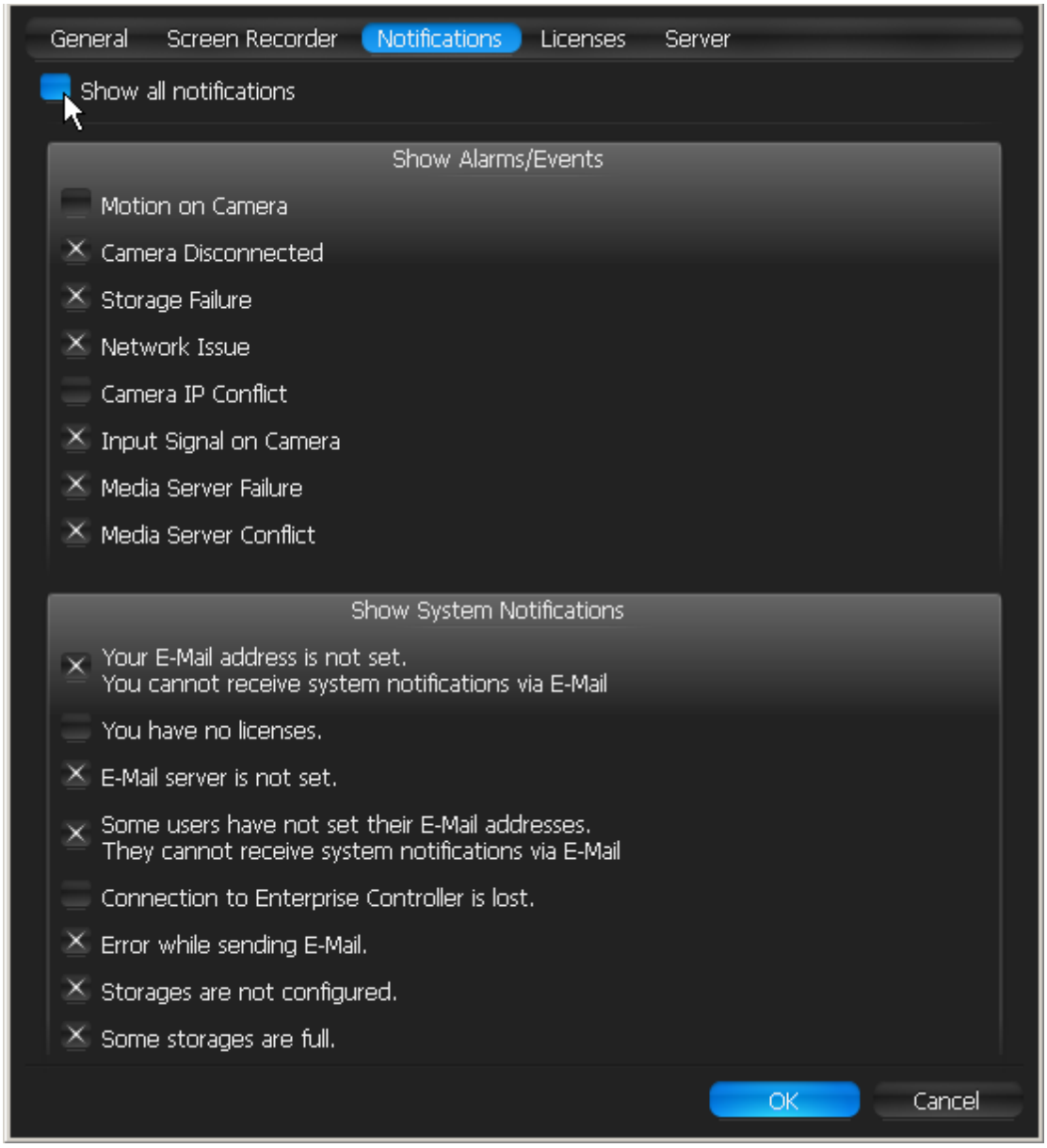
Some notifications may be disabled. For instance, if motion detection events occur too often, it may be useful to temporarily disable it in order to browse other notifications.

To disable a notification, check *Do not notify again about this* and click Postpone or OK.

The notification will disappear.

To re-enable a notification:

1. Proceed with one of the following:
   - Open Main Menu and go to *System Settings* –> *Notifications*
   - Open advanced parameters of any notification on Alarm/Events Rules form and click *Global Notification Settings...*
2. Once the form is open, check the notification types that should be displayed:



   Click *Show all notifications* to check all.
3. When finished, press *OK* to apply or *Cancel* to discard settings.

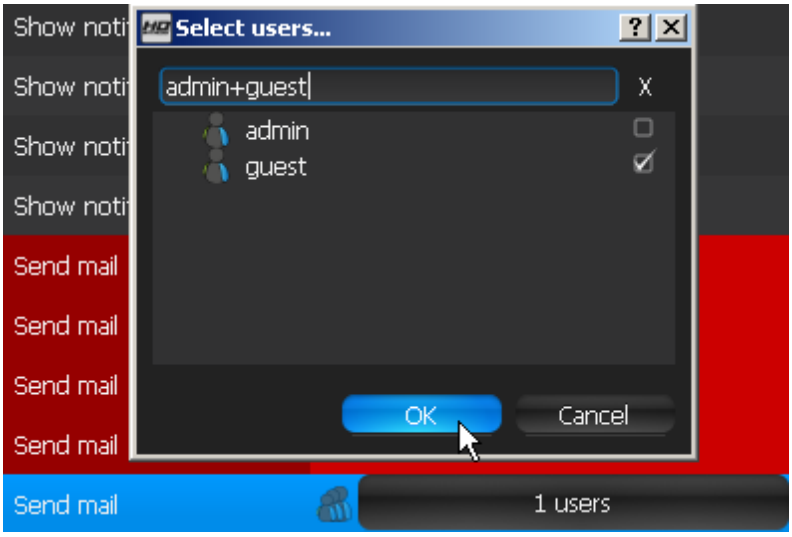
Mail Notifications

HD Witness can send E-mails to **Users** or to additional addresses when **Events** occur.

IMPORTANT. E-Mails cannot be sent if E-Mail Server is not configured. In this case, E-Mail Server is not Configured notification is shown up. See "Configuring Mail Server for E-Mail Notifications" for more details.

Basic Parameters

Users the E-Mails should be sent to:

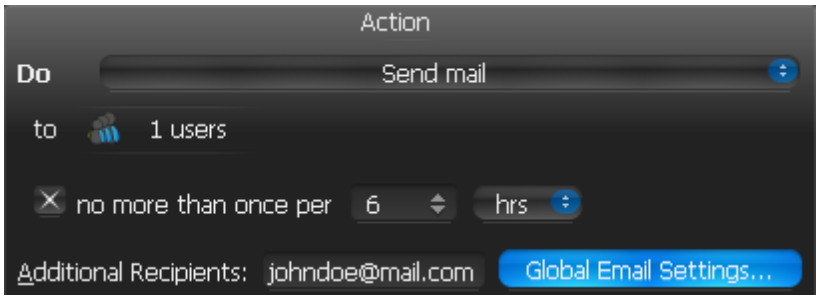


To filter search, use the *Filter* box. Filter criteria is the same as search (see "Search"). It is possible to Drag'n'Drop selected **Users** from Resource Tree onto **Action**'s advanced settings form.

IMPORTANT. E-Mails will be sent to **Users**' E-Mail addresses. If E-Mail address is not configured for **User**, then the user cannot receive E-Mails (see above). E-mail is Not Set for Users notification is generated in this case. See "Changing User Settings" for information on how to set up E-Mail for **User**.

Note: To send E-Mails to additional addresses, see advanced parameters.

Advanced Parameters



No more than once per ... – if checked, the notification will not appear if occurred more than once in the specified period of time.

Additional Recipients – additional E-Mail addresses to send notifications to. Several recipients must be separated by the ";" symbol.

Note: Click on *Global Email Settings* to configure E-Mail Server parameters.

May be caused by

All **Events**.

Why Action may work incorrectly

E-Mail Server is not configured. In this case, E-Mail Server is not Configured notification will appear. See "Configuring Mail Server for E-Mail Notifications" for more details.

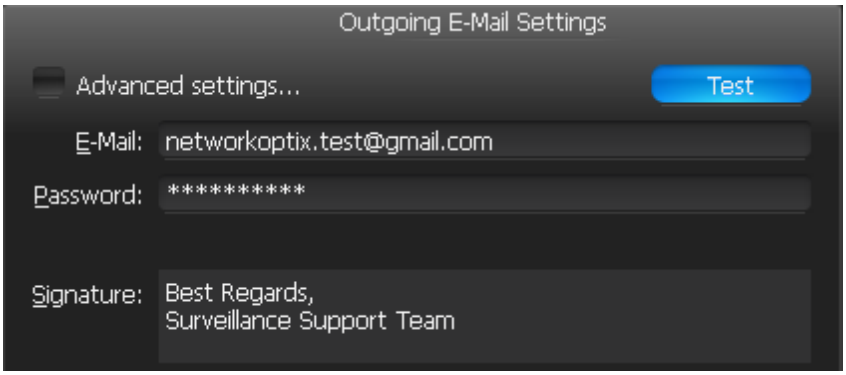
Event is not configured properly. See **Event**'s description for details.

Configuring Mail Server for E-Mail Notifications

In order to send Mail Notifications on **Events**, E-Mail Server should be configured. To configure E-Mail Server:

1. Choose from one of the following:
   - Open Main Menu and go to *System Settings –> Server*
   - Open advanced parameters of any Email notification on Alarm/Events Rules form and click *Global Email Settings...*
2. Choose quick or advanced E-Mail Server setup (see below for reference).
3. When finished, press *OK* to apply or *Cancel* to discard settings.

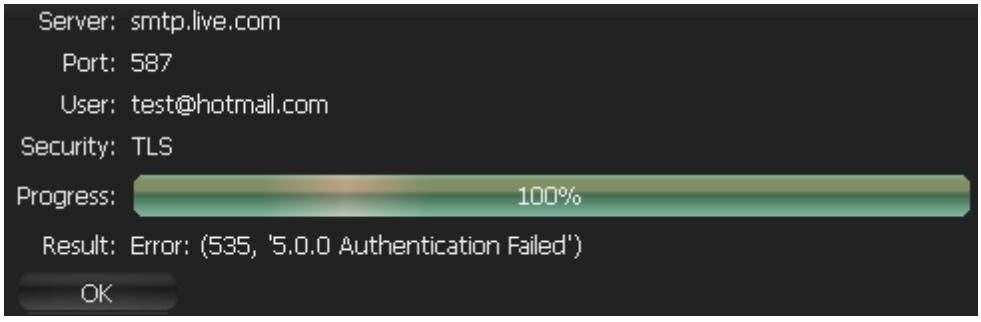
Quick E-Mail Server Setup



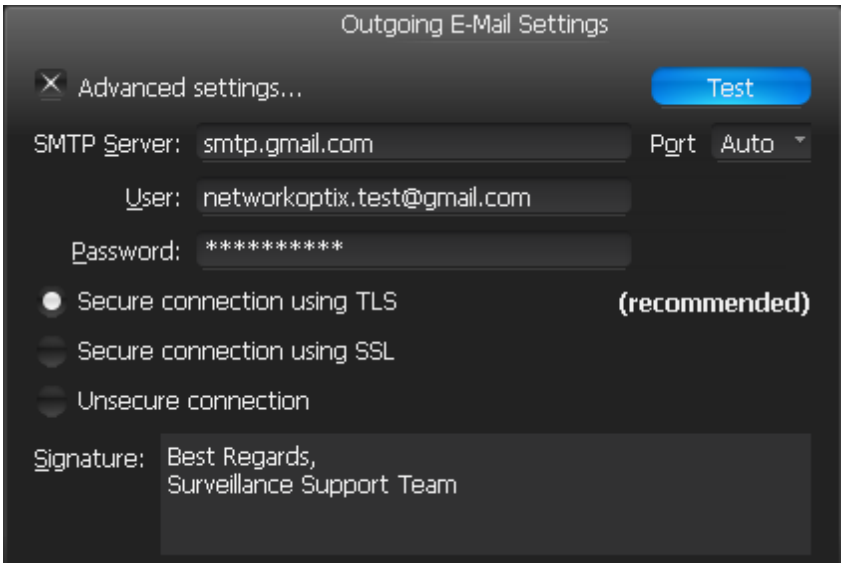
E-Mail/Password – address and password of the mail account, which will be used for outgoing mail. HD Witness will handle the rest.

Note: click *Test* to ensure that the settings are correct. If test fails:

- If the result is "Cannot test such parameters", the domain name is not supported. It is necessary to switch to Advanced mode and set up the server manually.
- If the result is different, the error message will be displayed:



Advanced E-Mail Server Setup



The parameters are the same as in **Simple Setup** plus:

- *SMTP Server*: E-Mail server address
- *Port* – SMTP Port
- Connection type: (Secure (TLS), Secure (SSL), Unsecure).

Note: click *Test* to ensure that the settings are correct. If test fails:

- Try a different SMTP Port
- Try a different connection type.

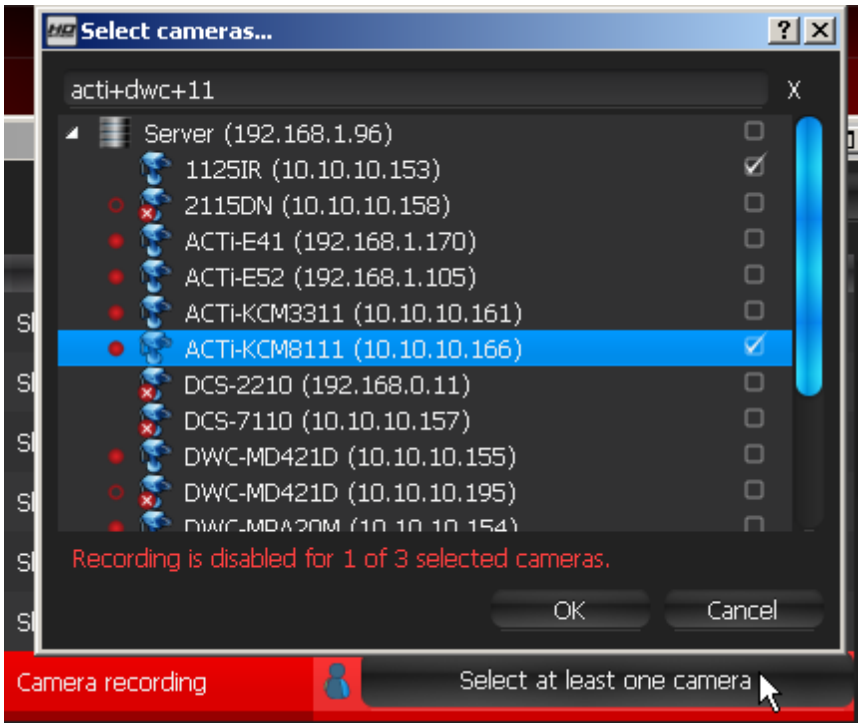
Start Recording on Camera

Starts recording on **Camera**(s) when **Event** occurs. For instance, if Motion is detected on Cameras 1, 2 or 4, recording on Cameras 4, 5 and 6 will start.

Basic Parameters

Camera(s) to record. To specify:

1. Click on *Select at least one camera* in the desired row on the Alarm/Event Rules form. The following form will appear:

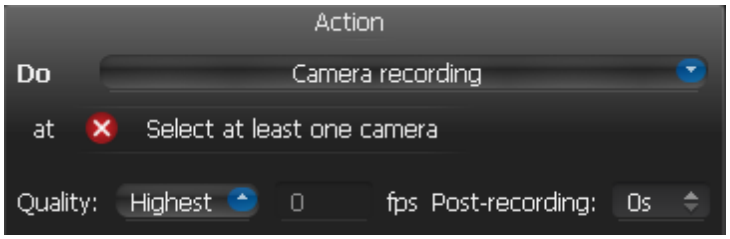


2. Check the cameras to record, then click *OK* (*Cancel* will discard changes).

To select all **Cameras** on a specific **Server**, check the corresponding box. To filter search, use the *Filter* box. Filter criteria is the same as search (see "Search"). It is possible to **Drag'n'Drop** the selected **Cameras** from Resource Tree onto the **Action**'s advanced settings form.

IMPORTANT. To record **Camera** on **Event**, recording must **be enabled** on **Camera**. Refer to "Editing Recording Schedule" for information on how to enable recording. If the "Recording" flag is not set on the selected **Camera**, the following message will be displayed (see above).

Advanced Parameters



Quality and *fps* – target recording parameters for **Camera**(s). If **Camera**'s maximum FPS is lower than specified, maximum FPS will be acquired.

Post-recording – the time it takes for the recording to be performed after the event is f complete.

May be caused by

Input Signal on Camera

Motion on Camera

Input Signal on Camera.

Why Action may work incorrectly

Recording is not enabled on **Camera**. Refer to "Editing Recording Schedule" for information on how to enable recording.

Event is not configured properly. See the **Event**'s description for details.

Start Panic Recording

Starts Panic Recording when **Event** occurs.

Basic Parameters

None.

Advanced Parameters

None.

May be caused by

Input Signal on Camera

Motion on Camera

Input Signal on Camera.

Why Action may work incorrectly

Event is not configured properly. See **Event**'s description for details.

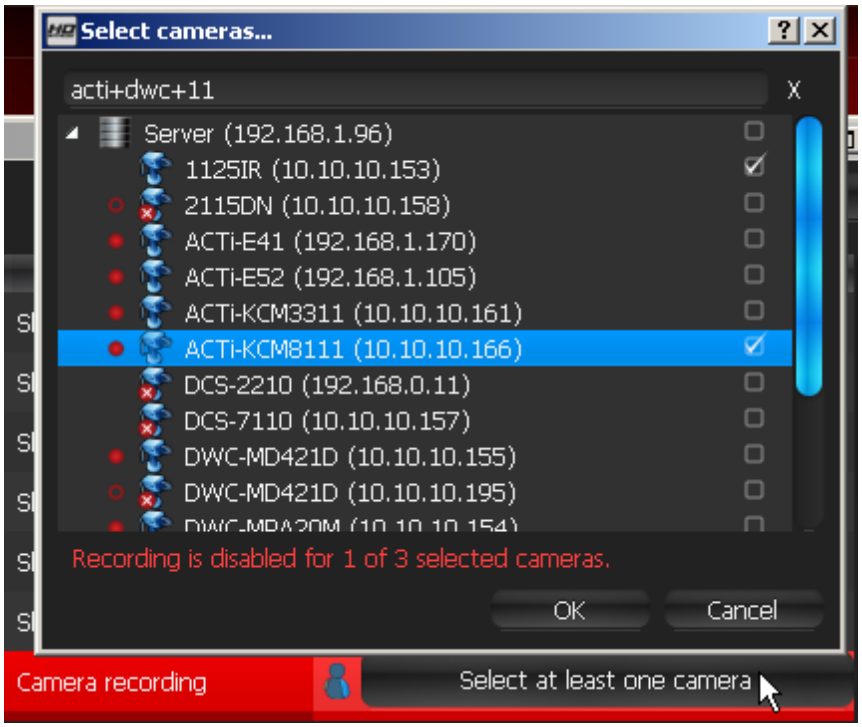
Trigger Camera Output

Generates output on **Camera**(s) when **Event** occurs.

Basic Parameters

Camera(s) output is triggered on. To specify:

1. Click on *Select at least one camera* in the desired row on the Alarm/Event Rules form. The following form will appear:

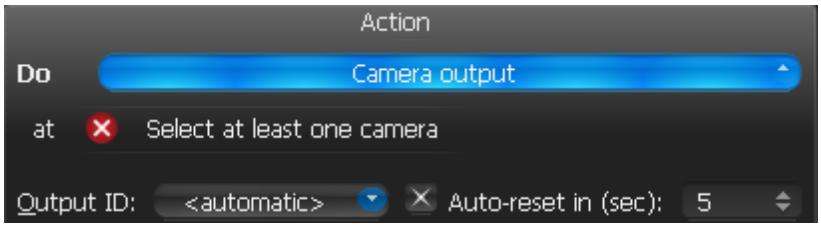


2. Check the cameras to detect motion, then click *OK* (*Cancel* will discard changes).

To select all **Cameras** on a specific **Server**, check the corresponding box. To filter search, use the *Filter* box. Filter criteria is the same as search (see "Search"). It is possible to **Drag'n'Drop** the selected **Cameras** from Resource Tree onto the **Action**'s advanced settings form.

IMPORTANT. To trigger output signals, output must be supported on **Camera**. If the selected **Camera** does not support output, then the corresponding message will be displayed (see above).

Advanced Parameters



Output ID – reserved for multi-channel recorder support.

Auto-reset in (sec) – if checked, the output will be reset automatically after the specified period of time.

May be caused by

Input Signal on Camera

Motion on Camera

Input Signal on Camera.

Why Action may work incorrectly

Output is not supported on some **Cameras**.

Event is not configured properly. See **Event**'s description for details.

Default Rules

As soon as HD Witness is installed, default **Rules** are set up.

The following **Events**

- Camera Disconnection/Malfunction
- Storage Failure
- Network Issue
- Camera IP Conflict
- Media Server Failure
- Media Servers Conflict

will result in

- Notifications to all **Users**.
- Mail Notifications for admin. To receive mail notifications, E-Mail Server must be configured (see "Configuring Mail Server for E-Mail Notifications") with e-mail address specified for admin (see "Changing User Settings").

Users Management

HD Witness provides a simple way to manage **Users**: there are only three roles in the System: **Super Administrators**, **Administrators** and **Viewers** (can be configured as **Live Viewer**, **Viewer**, **Advanced Viewer**). See "Introducing User Roles" for details.

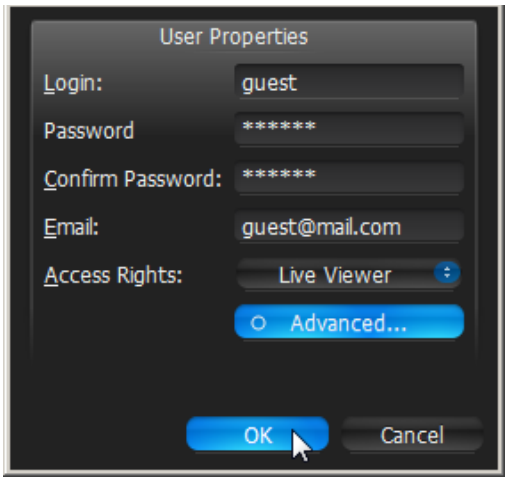
The following options are provided for users management:

- Creating New User (Admin Only)
- Changing User Settings
- Deleting User (Admin Only).

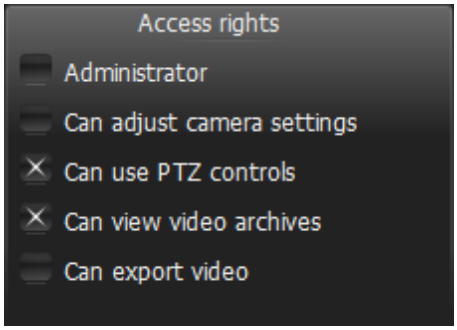
Creating New User (Admin Only)

To create **User**:

1. Do one of the following:
   - Open Main Menu and go to *New –> User*
   - **Right-Click** on *Users* in Resources Tree and choose *New*.
2. Enter user settings:
   - *Login* and *Password* – user credentials. **IMPORTANT:** login and password are **case sensitive**.
   - *Email* – this address will be used for E-Mail notifications. If it is not set the user will not be able to receive such notifications. See "Mail Notifications".
   - *Access Rights* – Administrator or Viewer. See "Introducing User Roles" for more details.



By default **Viewer** can only view live video. To setup additional permissions, click *Advanced*. The following **Permissions** can be assigned:



3. Click OK to create a user.

Once **User** is established, **Layouts** can be created and assigned to this **User**. See "Creating New Layout (Admin Only)".

Changing User Settings

The following **User Settings** can be modified:

- **Login** (Admin only) – can be changed for all users except **Super Administrator** (admin). Also, a user cannot change own login name. The login name can be set in Resource Tree.
- **Password** – can be changed for all users, except **Super Administrator** (`admin`). **Viewer** can only change own password.
- **E-Mail**.
- **Role** and **Permissions** (Admin only) – can be changed for all users, except **Super Administrator** (`admin`) . Also, **User** cannot change own role.

To change **User Details**:

1. Select any **User** in Resource Tree, **Right-Click** on Context Menu and choose *User Settings*.
2. Change the desired fields and click *OK* (or *Cancel* to close the form).

Deleting User (Admin Only)

It is possible to delete any **User**, except **Super Administrator**. A **User** cannot delete own profile. To delete, locate the desired **User** in Resource Tree, **Right-Click** for Context Menu and choose *Delete* (or press ***DEL***).

IMPORTANT. All associated **Layouts** will automatically be deleted along with the **User**.

Layouts Management

Layouts are a powerful and flexible way to represent video data in HD Witness. **Layout** can contain an unlimited number of videos: **Cameras**, **Local videos** or **Images**, which are not restricted in terms of location, size or orientation.

Initially, **Layout** is created and configured by **Administrator**. It can then be assigned to **Viewers**. Viewers can create its own **Layouts** based on the available **Resources** (Cameras and Local files) but **cannot save them**.

The following Layouts management actions are described in this section:

- Creating New Layout (Admin Only)
- Setting up Layout
- Assigning Layouts to Users (Admin Only)
- Deleting Layouts (Admin Only)
- Opening and Closing Saved Layouts.

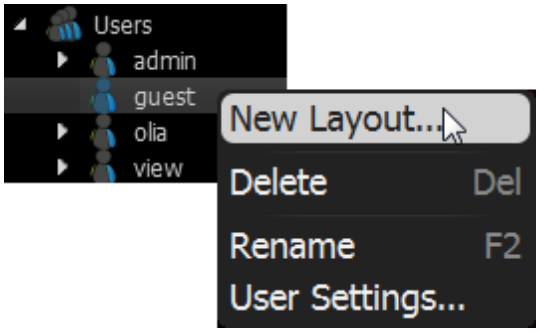
Creating New Layout (Admin Only)

The simplest way to create new **Layout** is to **open a new Tab** (see "Tabs and Layouts"). However in this case **Layout** will be created **locally** and will not be saved on **Enterprise Controller** and will not be restored after next login. **Layouts** should be saved for future use.

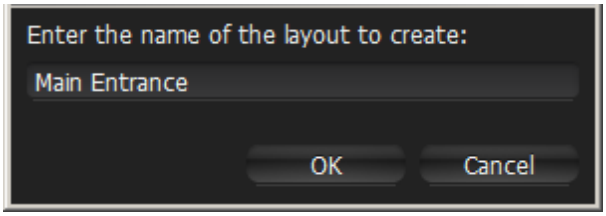
Viewer cannot create a layout on **Enterprise Controller**. However he can open a new **Tab** and drag any available video onto a **Scene**. Such **Layouts** cannot be saved and will **remain local**.

To create new **Layout** for specific **User**:

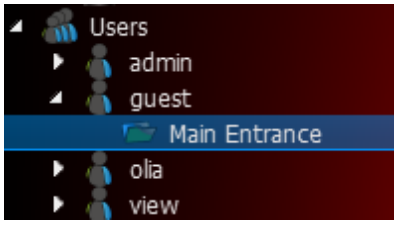
1. Find **User** in Resource Tree, **Right-Click** on Context Menu and choose *New Layout*:



2. Enter **Layout**'s *Name* and click OK (*Cancel* will discard all changes):



3. New **Layout** will be created and displayed in Resource Tree. A new **Tab** will automatically appear:



There are several ways to set up **Layouts**:

Set Up **Own Layouts**:

1. Open a new **Tab**, configure **Layout** and save.
2. Locate own **User** in Resource Tree, create new **Layout** using Context Menu and save.

Setting up **Layouts** for other **Users**:

1. Find the desired **User** in Resource Tree, create new **Layout** using Context Menu and save.
2. Open a new **Tab**, configure and save **Layout**, then associate with the desired **User** (See "Assigning Layouts to Users (Admin Only)").

Setting up Layout

This section provides detailed instructions on how to configure layouts:

- Adding Items to Layouts
- Removing Item(s) from Layouts
- Working with Several HD Witness Windows
- Saving Layouts (Admin Only).

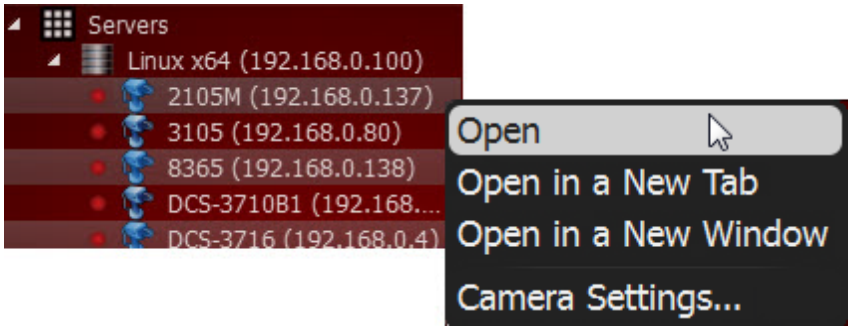
Adding Items to Layouts

More than one **Item** can be added to **Layout** at a time regardless of their source (live cameras, local video, images, etc.). HD Witness allows **24 Items** to be displayed on the **x86** architecture and **64 Items** – on **x64**.

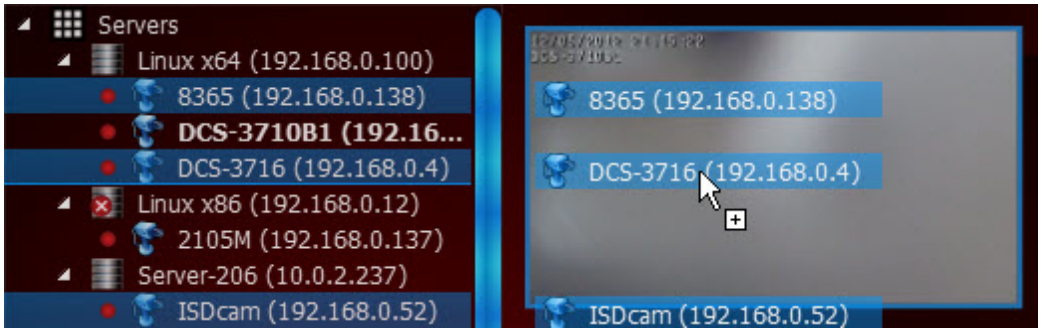
IMPORTANT. **Viewers** cannot add **Items** to predefined **Layouts**. They can only open and add **Items** to new **Tabs**.

To add **Item**(s) to **Layout,** choose from one of the following:

- **Double-Click** on the **Item** in Resource Tree
- Invoke Context Menu in Resource Tree and select *Open*. Multiple items can be selected and added (***Ctrl*** + ***Shift*** and select the desired **Items**).



- Drag and drop from **Resource Tree**

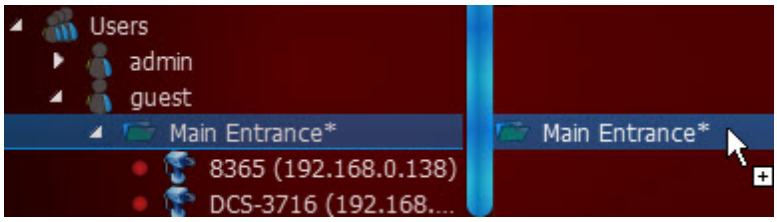


- ***Ctrl*** + **Drag and Drop** items onto **Scene** – duplicates **Item**(s).To avoid duplication, release Ctrl and hit Esc, while **holding the left mouse button.**

  IMPORTANT. Hold ***Ctrl*** or use the mouse to draw a selection of multiple **Items** on **Scene**. To select all **Items** on **Scene,** use ***Ctrl + A***. Refer to "Selecting items" for more information.

- Open **Local file**(s) or **Folder** – they will be added to the current layout (see "Opening Local Files Outside of Media Folders")

- **Drag and Drop Layout** from Resource Tree

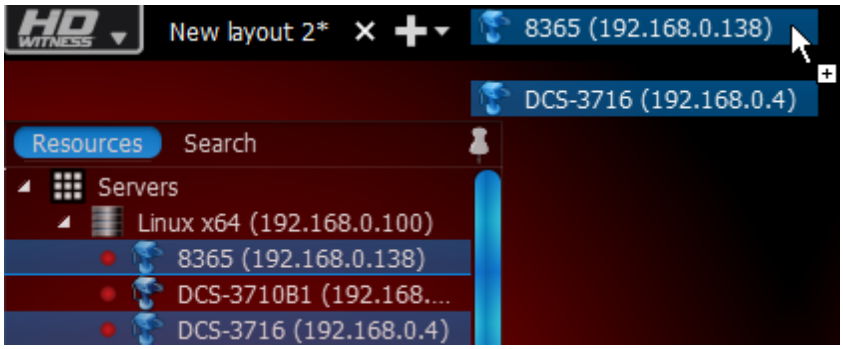


- ***Ctrl*** **+ Drag and Drop** from **Scene** to Resource Tree – dropped **Items** will automatically be added to **Layout** (use **Multi-Selection** to selection more than one item). To prevent duplication, release ***Ctrl*** and hit ***Esc*** while **holding the left mouse button**.

New **Items** will automatically occupy any available space.

To open items directly from new **Tab**:

- Select desired **Item**(s) from Resource Tree and select *Open in New Tab* from Context Menu
- Drag selected **Item**(s) from Resource Tree and drop them onto Tab Navigator



- ***Ctrl*** + **Drag and Drop** items from **Scene** to Tab Navigator (**Multi-Selection** can be applied). To prevent duplication, release ***Ctrl*** and hit ***Esc*** while **holding the left mouse button**.

  IMPORTANT. It may be difficult to locate and add each item manually. Search may be very useful in configuring a new layout (see "Search").

How to configure a layout using **Search**:

1. Create a new Layout.
2. Enter keywords into the Search box. The search results will appear on **Scene** automatically.
3. By adding or deleting keywords from the search box, the items on **Scene** will vary.
4. Do not forget to save configured **Layout**.

Removing Item(s) from Layouts

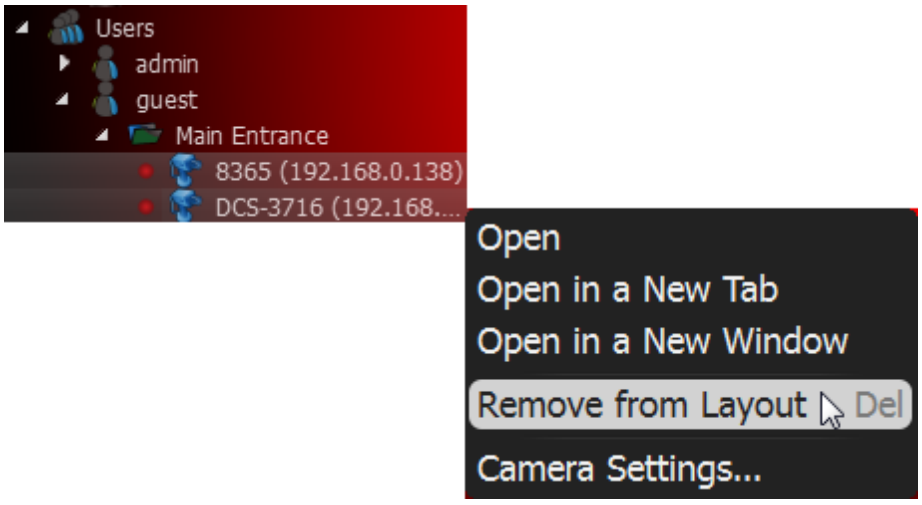
IMPORTANT. **Viewers** cannot remove **Items** from predefined **Layouts**. They can only open new **Tabs** and add/remove **Items**, but cannot save.

To remove Item(s) from Layout on Scene:

1. Select desired item(s) on **Scene**.
2. Proceed with one of the following:
   - Click to remove **single Item**
   - Open Context Menu and select *Remove from Layout* (or hit ***Del***) to remove **all selected Items**

To remove Item(s) from Layout in Resource Tree:

1. Expand **Users** and locate the desired **Layout** in Resource Tree.
2. Select desired **Item**(s) under specified **Layout**. **Multi-Selection** can be applied (see "Working with a Resource Tree").
3. Open Context Menu and select *Remove from Layout* (or hit ***Del***).



4. Confirm deletion by clicking *OK*.

Adjusting the Layout Look and Feel

Any video manipulation can be performed in the application to customize **Layout**:

- Selecting items
- Moving and Swapping Items within Scene
- Resizing Items within Scene
- Using Fit In View
- Changing Distance between Items
- Changing Aspect Ratio of Scene Cells

It's recommended to first make an item selection and configure the look on **Scene**.

IMPORTANT. **Viewer** is allowed to perform any operations, except to **save Layouts.**

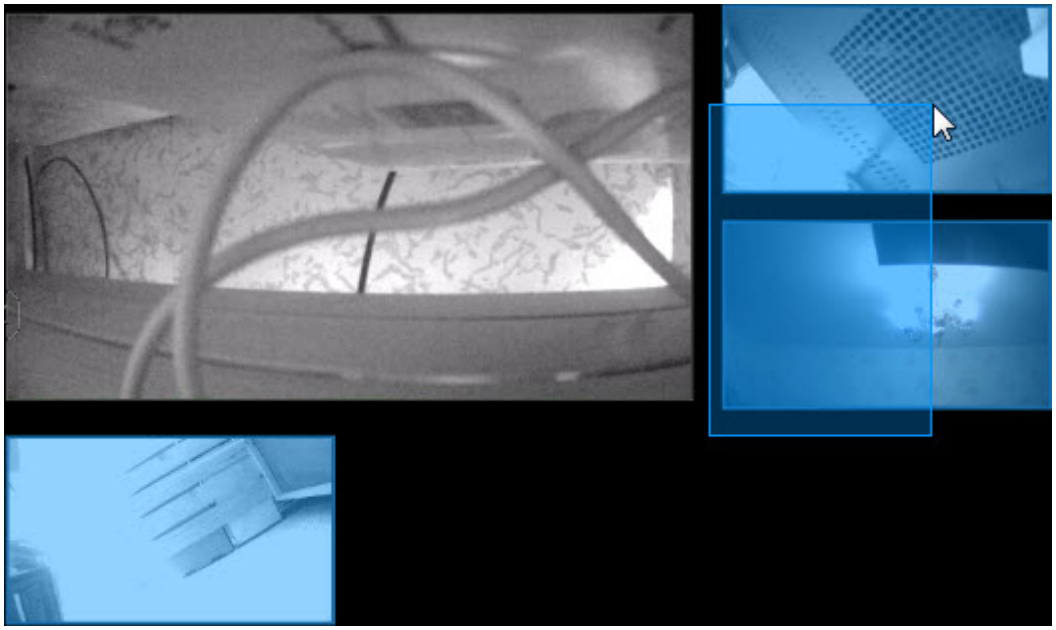
Selecting items

Click on **Item**(s) to **select**. The selected **Items** will expand on the screen. To bring it back to normal, click again. ***Arrow keys*** may be used to scroll through **Items**.

To select more than one Item:

- **Click and Drag** over **Items** with a mouse to draw a selection.
- Hold ***Ctrl*** and **Click** on several **Item**s. **Click again** to remove selection. **Click** without ***Ctrl*** to discard the current selection.
- Use ***Ctrl + A*** to select all **Items** on **Scene**.
- **Click and Drag** mouse holding ***Shift*** to bring the selected items to **Scene**.

The selected items are outlined or filled with a color:



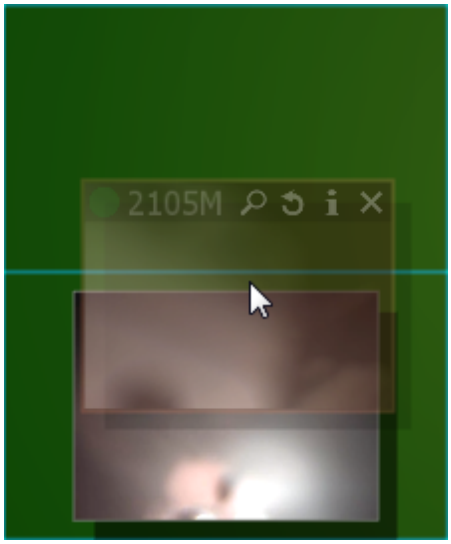
See also how to select **Item**(s) in "Resource Tree".

Moving and Swapping Items within Scene

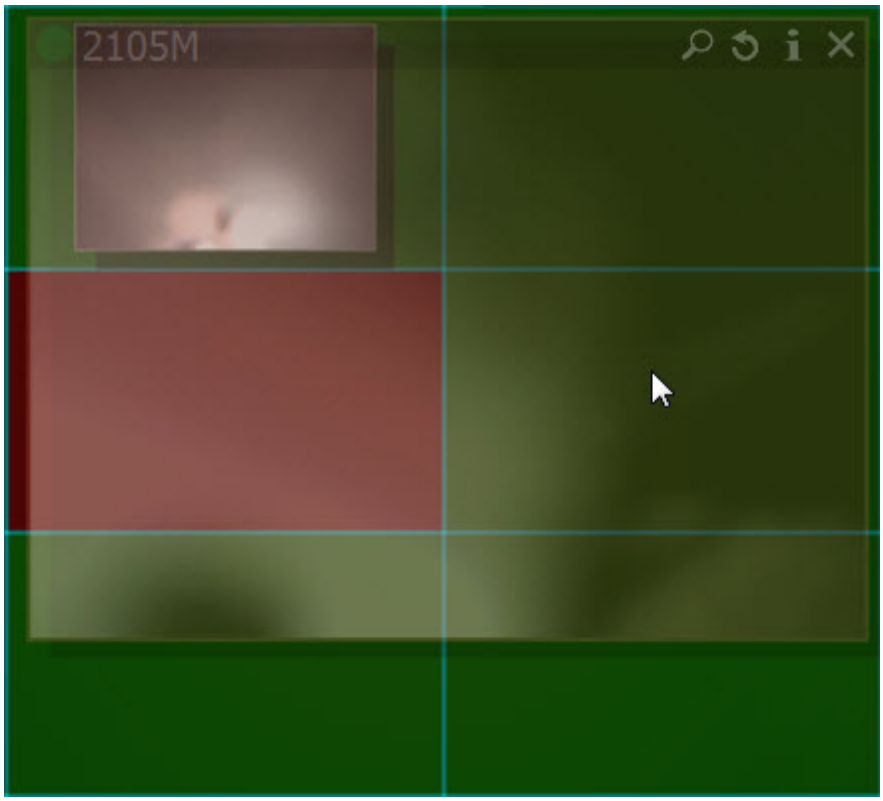
Scene consists of cells. Each cell may contain one **Item**. The initial aspect ratio of a cell is **16:9** but it can be changed to **4:3** (see "Changing Aspect Ratio of Scene Cells").

In order to move **Item**, **Click** on it and **Drag** it to a new position (grid cell borders are visible while in motion). Multiple items can also be moved.

If the desired position is already occupied, **Items** will be swapped (if possible).



If swapping is not possible, the target cell will be marked red:



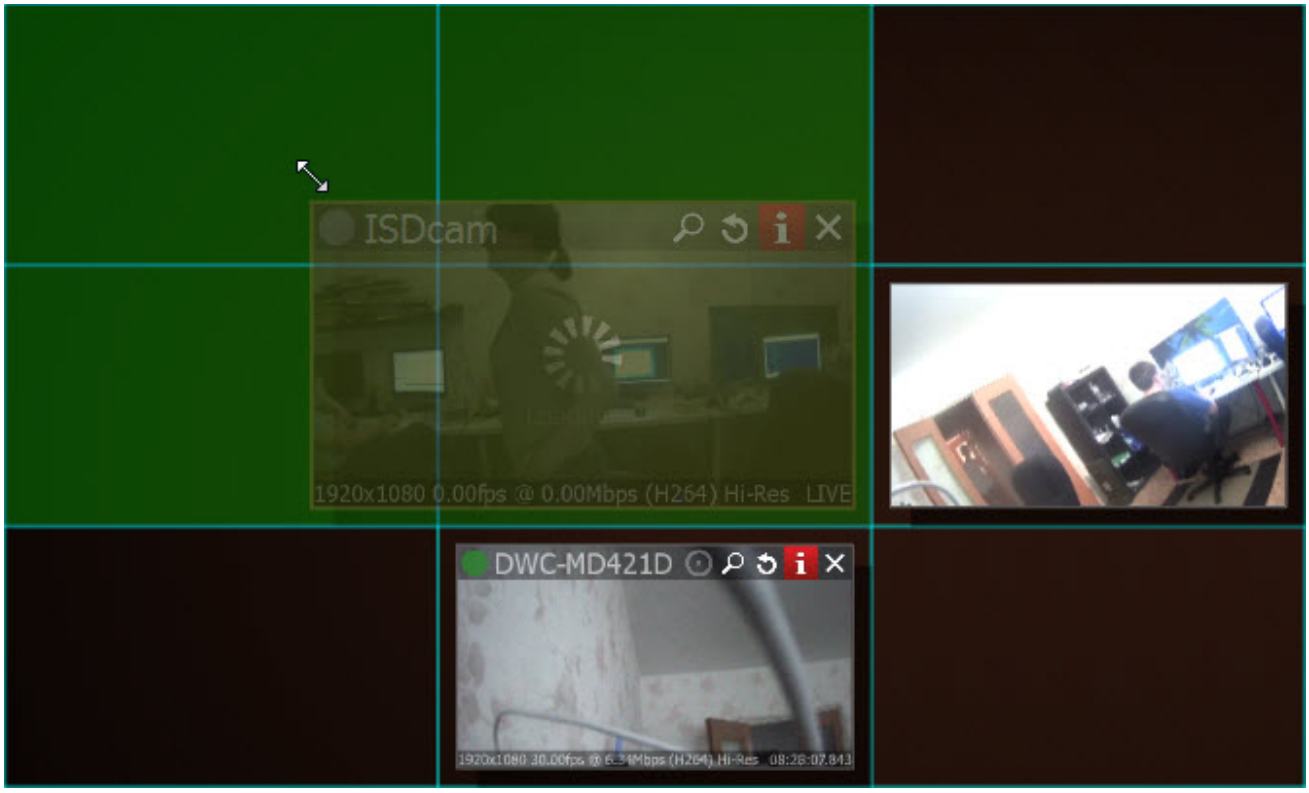
If bigger **Item** is being replaced by a smaller one, they will swap sizes as well as positions.

Resizing Items within Scene

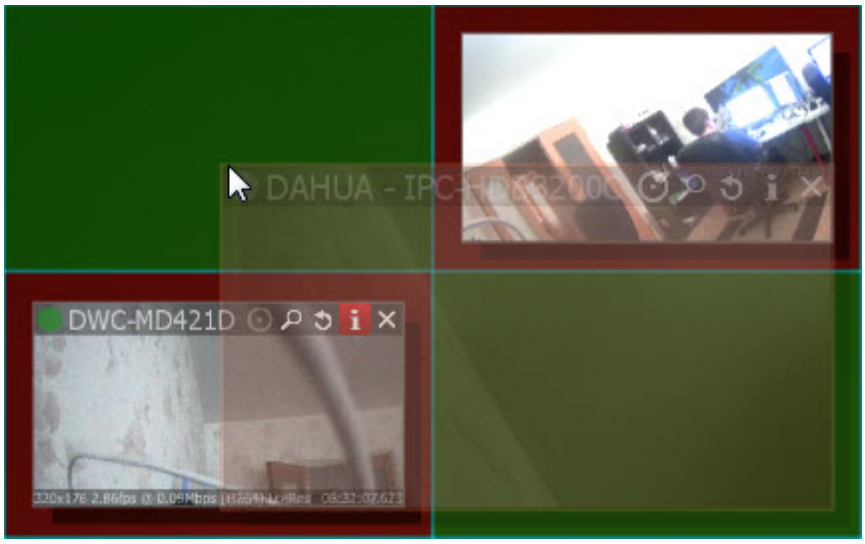
Resizing items is an easy operation in HD Witness. To resize, select the edge on **Item**, **Click and Drag** the mouse to resize.

Item is resized according to its proportions, so it can occupy 1, 4, 9 cells etc.

If resizing is possible, the new cells are highlighted in green:



If resizing is not possible, the cells will appear red:



In this case the best practice is:

1. **Move the entire Scene** using a **Right-Click Drag**.
2. **Resize an Item** to occupy the available space.

OR

3. **Move the desired Item** away from the rest of **Items**
4. **Resize the Item** to occupy the available space.

Using Fit In View

This feature allows users to revert the view to maximum in order to view all **Items** conveniently. This can also be used when **zooming** or **moving** the entire **Scene**.

Fit In View can be performed by **Double-Clicking** on any empty space on **Scene** (or by **Right-Clicking** on Context Menu and selecting *Fit in View*).

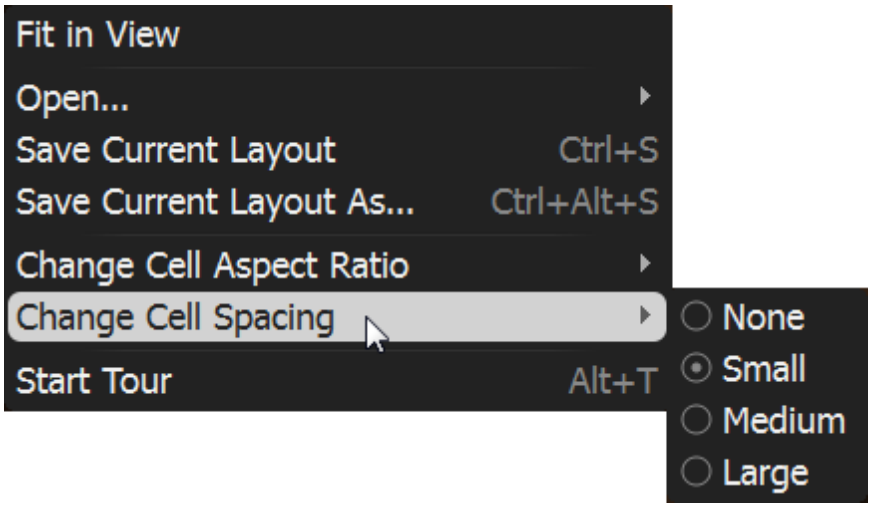
Also **Fit In View** is performed automatically if:

- Change in view mode: **Window** or **Fullscreen** (see "Full Screen and Windowed Mode")
- Change in HD Witness window size.

Changing Distance between Items

This feature is used when multiple **Items** need to be stitched together or positioned closer to each other. A good example is a panoramic view derived from four individual single-sensor cameras to compose a 180 degree view.

To adjust the distance between **Items**, use *Change Cells Spacing* Context Menu item or ***Ctrl*** + **Mouse Wheel** on **Scene**:

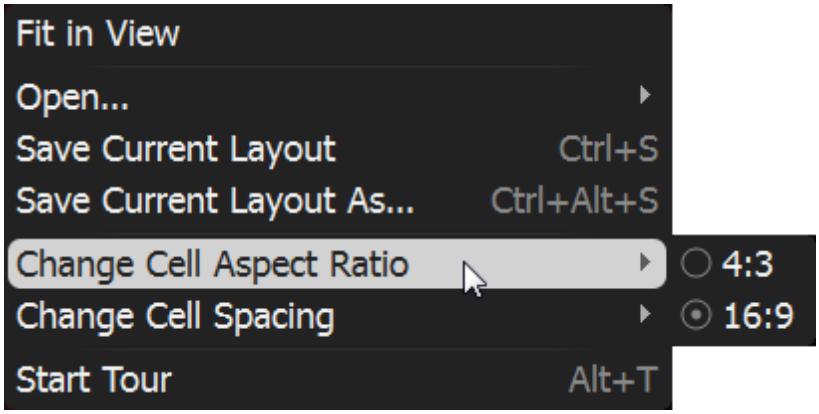


IMPORTANT. If aspect ratio of an item is not **4:3** or **16:9** the extra space will remain.

Changing Aspect Ratio of Scene Cells

Some **Cameras** provide video in **4:3** or **16:9** format. This feature is used in order to occupy **Scene** space efficiently: cells' **aspect ratio** must be the same as **Cameras**' one.

To select aspect ratio use *Change Cell Aspect Ratio* Context Menu item:



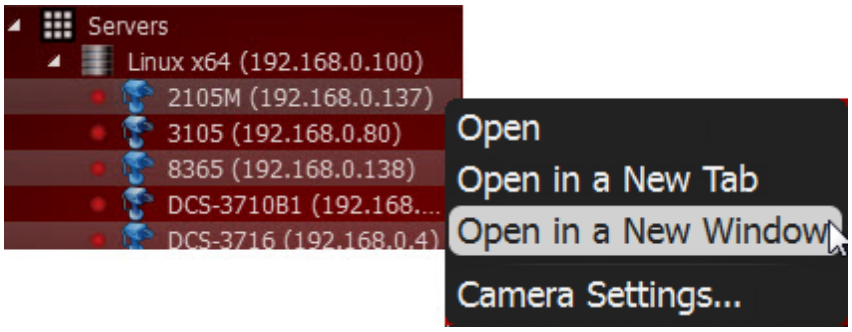
Working with Several HD Witness Windows

It is possible to set up **Layouts** on several HD Witness windows in a **multi-monitor environment**.

To open a new window, click on *Main Menu –> New –> Window* (or press ***Ctrl + N***).

Also selected **Items** may be opened in a new window:

1. Select desired **Items** in Resource Tree or on Scene (**Multi-Selection** can be applied, see "Selecting items").
2. Invoke Context Menu and select ***Open in New Window***.



Finally, it is possible to **drag Items from one window to another** (only **Administrators** can drag **Items** to predefined **Layouts**):

1. Select desired **Items** in Resource Tree or on Scene (**Multi-Selection** can be applied, see "Selecting items").
2. Hold ***Ctrl*** and **Drag** selected **Items** to a new window.

Saving Layouts (Admin Only)

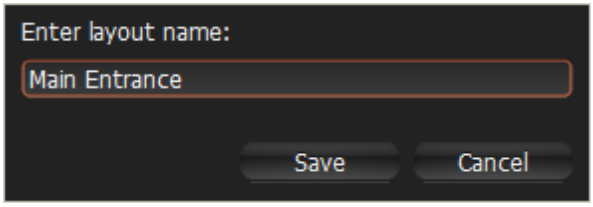
To retain any changes made to **Layout**, **User** must save it.

Note: current playback position and selection is saved for **Layout** as well. After HD Witness is closed, all saved layouts that were opened in **Tabs** prior to closing, will be restored.

Layout should always be saved in case of any changes. If any changes are made, an asterisk will appear in the corresponding **Tab** and in Resource Tree:

To save **Layout**:

- Open Context Menu on **Scene** (on empty space) and select *Save Current Layout* (or press ***Ctrl + S***). **Layout** will be saved to the previously assigned file name (the **Tab**'s caption).
- Open Context Menu on **Scene** (on empty space) and select *Save Current Layout As* (or press ***Ctrl + Alt + S***). **Layout** will be saved as specified by **User**:

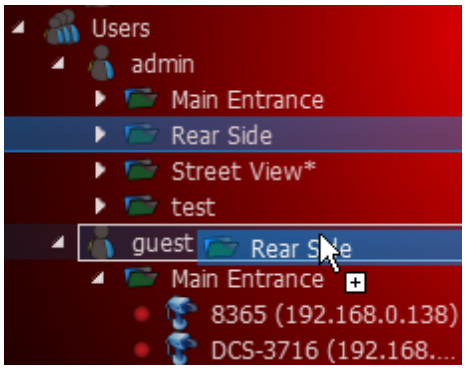


- Find the desired **Layout** in Resource Tree, invoke for Context Menu and select *Save Layout*.

IMPORTANT. Saved **Layout** is activated immediately (if running on multi-machines, all saved changes to **Layout** will reflect on all machines identically). Refer to "Opening and Closing Saved Layouts" for more information.

Assigning Layouts to Users (Admin Only)

To duplicate **Layout** for another **User**(s), **Drag and Drop Layouts** within Resources Tree:



Administrator can then modify **Layouts** as needed.

Deleting Layouts (Admin Only)

To delete **Layout** from Resource Tree:

1. Find and select desired **Layout**(s) in Resource Tree.
2. Invoke on Context Menu and choose *Delete Layout* (or press ***Del***).
3. Accept deletion by clicking on *Yes* or press *Cancel* to discard all changes.

If the layout that is opened on another computer is deleted, all items **will disappear**.

Opening and Closing Saved Layouts

As **User** logs into HD Witness, all existing **Layouts** are listed in Resource Tree. To open an existing **Layout**, find the desired layout in Resource Tree and perform one of the following:

- Drag it onto **Scene**.
- Open Context Menu and choose *Open Layout* (or press ***Enter***).

To open multiple **Layouts**, select the desired layouts in Resource Tree (using **Multi-Selection**) and do one of the following:

- Drag selection to **Scene**.
- Open Context Menu and choose *Open Layouts*.

Layouts will be opened in separate **Tabs**. If **Tab** already contains this **Layout**, it will not be opened again.

Note: after HD Witness is closed, all saved **Layouts** opened in **Tabs** will be restored when **User** logs back in.

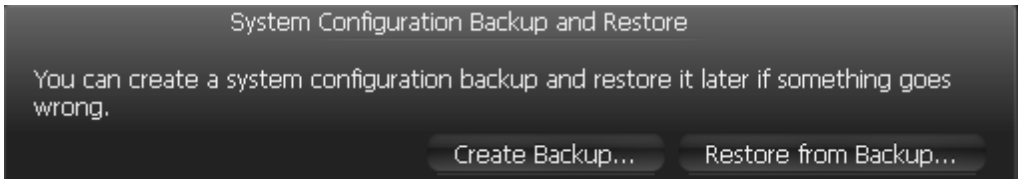
Backing up and Restoring HD Witness Database

HD Witness provides simple mechanism to perform backup and restore of system settings. It is done by backing up the HD Witness database as a single file. Database contains all system configuration.

IMPORTANT. It is recommended to perform restore operation on the same computer backup has been saved.

To back up HD Witness database:

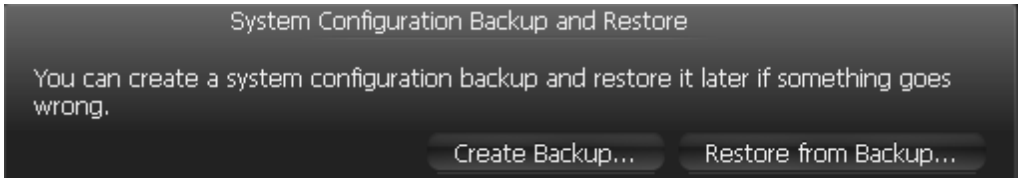
1. Open Main Menu and go to *System Settings*.
2. Go to the *Server* tab.


System Configuration Backup and Restore
You can create a system configuration backup and restore it later if something goes wrong.
Create Backup...
Restore from Backup...

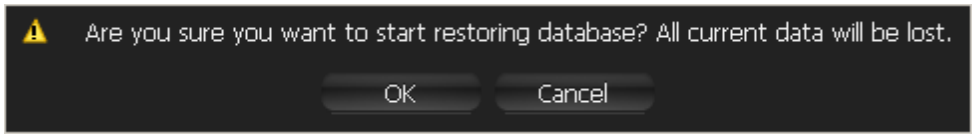
3. Click *Create Backup...* The window will open. Choose the desired location on the local file system to save the backup then click *Save*.

To restore HD Witness settings from backup:

1. Open Main Menu and go to *System Settings*.
4. Go to the *Server* tab.


System Configuration Backup and Restore
You can create a system configuration backup and restore it later if something goes wrong.
Create Backup...
Restore from Backup...

5. Click *Restore from Backup...* The window will open. Choose the backup file then click *Open*.



6. If click OK, database will be restored.

   IMPORTANT. It may be necessary to restart **Media Servers** and HD Witness Clients after restore.

Playback in HD Witness

HD Witness offers a smooth playback feature. See "Playback Panel" for more information on **Playback** interface.

The following can be played back:

- **Cameras** (see "Watching Cameras in HD Witness"). It is possible to view archive and live in **Time Line** among other features helping **User** to perform search archived footage.
- **Local files**: **Video Files**, **Images** (see "Playing Back Local Files in HD Witness").

The following operations can be performed in addition to playback:

- Forensic Analysis
- Exporting
- Taking a Screenshot
- Tours

All operations described in this section do not require administrative privileges. However, some operations may require certain permissions. See "Introducing User Roles" for details.

Hardware Acceleration of Video Decoding

HD Witness provides experimental feature that may enhance performance by using GPU. Intel ® Quick Sync technology must be supported by the video card to enable this feature.

Additionally there are few more tricks in order to maximize the performance. It is recommended to have 2 video adapters:

- **Internal Intel HD Graphics** – the processor should be Intel ® Core i3, i5 or i7 and Intel ® Quick Sync technology must be supported by motherboard
- **External Graphic Card** (ATI or NVidia).

Finally those video adapters must be plugged in the monitor. If one monitor has several video inputs it may be necessary to plug internal and external adapters to the same monitor to different inputs. Main output should be the external graphic card. To do so:

1. Turn off the computer.
2. Connect monitor's Input port 1 to Intel HD Graphics.
3. Connect monitor's Input port 2 to External Graphic Card.
4. Switch to Input port 2 on the monitor's screen menu.
5. Turn on the computer.

Then proceed with the the following to enable hardware acceleration:

1. Open Main Menu and go to *System Settings*.
2. Check *Use advanced hardware acceleration*.
3. Click *OK* when done or *Cancel* to discard changes.
4. Restart **Client**.

Note: This mode is experimental and may cause some flickering, noise etc.

Watching Cameras in HD Witness

HD Witness provides a powerful and easy camera playback engine that enables users to quickly find a video fragment, perform forensic analysis, capture screenshots and export video in just a few clicks.

This section provides a detailed description on camera playback. The following operations can be performed:

- Navigating through Archive and Live
- Searching through Archive

Note: It it recommended to read the following section prior to moving on to the next step: "CPU and Bandwidth Saving during Playback (RADASS)".

CPU and Bandwidth Saving during Playback (RADASS).

Lastly, videos can be displayed in a slide-show mode. See "Tours" for more details.

CPU and Bandwidth Saving during Playback (RADASS)

HD Witness's architectures provides significant CPU and network bandwidth savings by acquiring multiple streams from a single camera: **High Resolution** (regular) and **Low Resolution** (approximately 10 times less bandwidth). If there is not enough bandwidth between **Client** and **Media Server** to display the **High Resolution** stream while viewing a camera, then the camera is automatically switched to **Low Resolution** mode.

In case of insufficient CPU, a user may experience difficulties with displaying too many videos simultaneously (examples: running over 20 full high resolution videos at the same time, fast forwarding multiple full high definition videos at the x16 speed, etc.). In this instance, cameras are switched to a **Low Resolution** stream. As a result, CPU will yield a much smoother playback.

Additionally, it is possible to choose resolution **manually**. To do so, **Right-Click** on Scene's empty space and choose *Change Resolution...* The changes are applied once to the entire **Layout** and will be reverted back to **Auto** whenever a user re-opens **Layout**.

Note: this feature requires support of **camera dual-streaming.**

Navigating through Archive and Live

It is very easy to navigate through **Live** and **Archive** in HD Witness. Here are some tips and shortcuts.

IMPORTANT. It is only possible to navigate through **recorded fragments (chunks)**. **Position Slider** to the dark area will jump to the next available recorded fragment (displayed in green on **Time Line**).

By default, all **Cameras** are set to display **Live** if opened for the first time.

Note: all **Users** are allowed to view cameras **Live**. However, to view Archive, **Viewers** must have the appropriate **permissions**.

Search **Archive**:

- **Click** on any desired position on **Time Line** or **Time Scale**.
- **Drag Time Slider** to the desired position. The picture will refresh while dragging.

Time Scale navigation:

- Zoom **Time Scale** using **Mouse Wheel** for finer selection
- Move **Time Scale Scrollbar**
- **Double Click** on **Time Scale Scrollbar** to zoom out

Go to **Live**:

- Press LIVE or ***L***
- Move **Position Slider** all the way to the right

Play/Pause: Press or ***Space***

Fast Forward or **Rewind**:

- Press or ***Ctrl + Right Arrow*** to increase speed
- Press or ***Ctrl + Left Arrow*** to decrease speed
- Available speeds on play: -16x, -8x, -4x, -2x, 1x, 2x, 4x, 8x, 16x
- Available speeds op pause: -2x, -1x, -0.5x, -0.25x, 0x, 0.25x, 0.5x, 1x, 2x
- Use **Speed Slider**: very left position is -16x (-2x on pause), very right one – 16x(2x on **Pause**)
- **Click** on **Speed Slider** to change speed temporarily and then revert to 1x (0x on **Pause**)
- **Drag Speed Slider** to change speed permanently (or use **Mouse Wheel** on **Speed Slider**)
- If **Rewinding** while in **Live** mode, the position will be switched to **Archive**
- If **Fast Forwarding** while viewing archive, camera(s) will be switched to **Live** if the very right position is reached.

Previous/Next Frame (**Pause** only):

- Press or ***Ctrl + Right Arrow*** to skip to the next frame
- Press or ***Ctrl + Left Arrow*** to skip to the previous frame
- Use **Mouse Wheel** on **Speed Slider** when on **Pause**

Previous/Next Recorded Fragment:

- Press or ***Ctrl + Right Arrow*** to skip to the next frame
- Press or ***Ctrl + Left Arrow*** to skip to the previous frame

Useful sections:

- Pan-Temporal Time Line
- Navigating through Several Cameras Synchronously.

Pan-Temporal Time Line

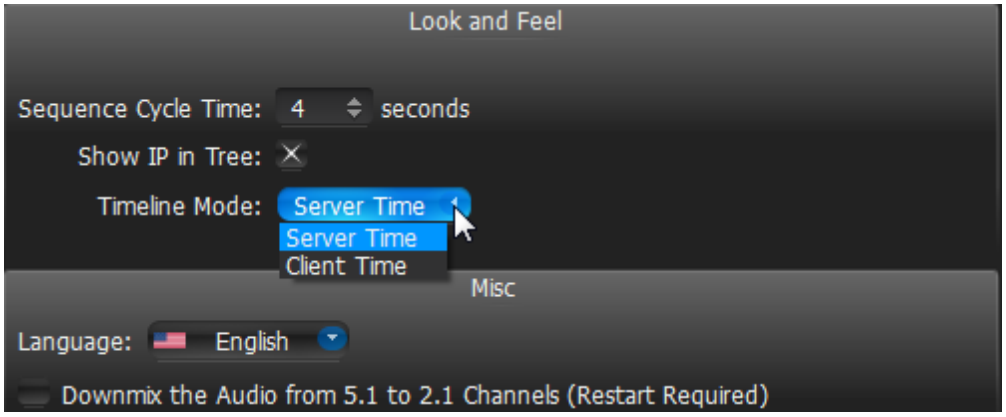
Pan-Temporal Time Line is a convenient way to navigate through **Live** and **Archive** footage (below).

The current time is indicated by **Position Slider**. The very right position indicates that **Live** video is currently played back. If slider is moved to the left, the playback automatically is switched to the **Archive**.

Time Scale is displayed on the bottom of the **Time Line**. It contains marks indicating the time. **Time Scale** can be zoomed in and out by mouse wheel or buttons at the left. This is extremely useful when trying to find a particular event navigating through a long period of time. **Double Click** on **Time Line Scroller** (the very bottom) to fully zoom out.

Time Line can display **Local** or **Server** time (specified in System Settings). To change the setting:

1. Open **Main Menu** and choose System Settings
2. Use the *Timeline Mode* setting in *Look and Feel*:



3. Click *OK* when done or *Cancel* to discard changes.

Note: Export and Preview Search features will depend on this settings as well. This setting does not affect **Recording Schedule** (always based on **Media Server Time**).

Time Line's color indicators:

- **Black** – empty space (no recording took place in this period of time)
- **Green** – represent recorded fragments
- **Red** – motion regions. Displayed only if **Smart Search** is active. See "Performing Smart Search".

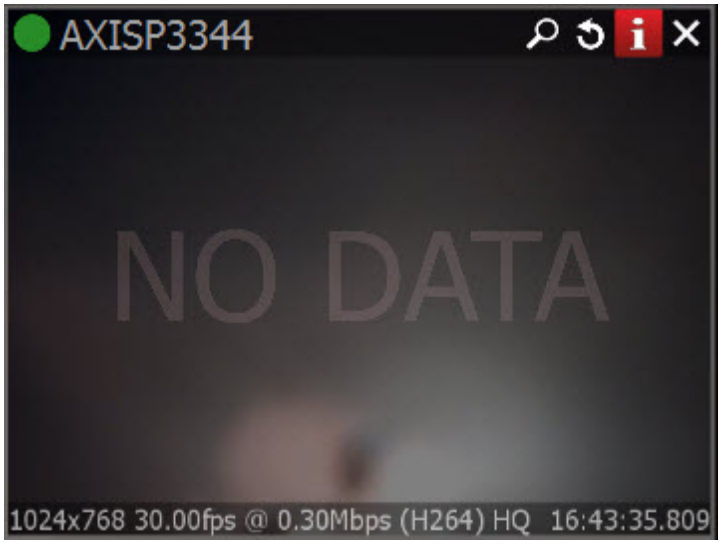
It is possible to navigate through recorded fragments only. When moving **Position Slider** to the black area (no recording), it will jump to the next available recorded fragment. If several live **Cameras** are currently displayed, all recorded fragments are combined on **Time Line** (in the lower *All Cameras* line).

Navigating through Several Cameras Synchronously

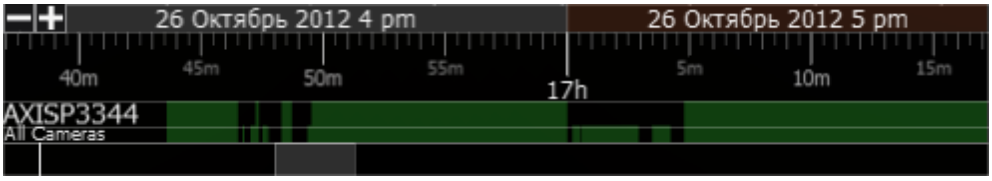
HD Witness provides a powerful engine that enables users to navigate through multiple cameras: if several **Cameras** are displaying at the same time, they can be **synchronized**.

If **User** performs search, fast forward, rewind or search by frame – each camera will be synchronized.

However, recording may be set up differently. If no recording took place over a certain period of time, **NO DATA** will appear on the camera view.



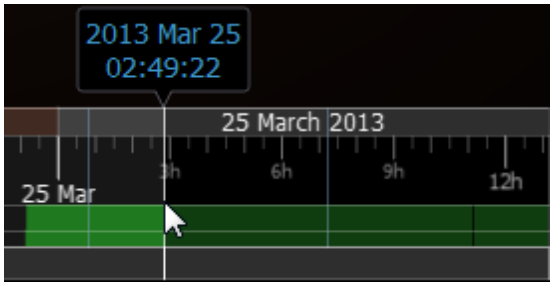
Recorded fragments are displayed on the **Time Line** in two rows:



- The upper row displays fragments for **Camera** selected on **Scene**
- The lower row – for all **Cameras** displayed on **Scene**

It is possible to disable **Synchronization** (press SYNC button). If no **Item** is selected, the selection will move to the previously selected item, which will become the only item affected by playback controls (seek, speed etc).

Thus, if **Synchronization** is disabled, it is possible to seek each **Camera** in a different position. In this case **Time Line** displays positions for all **Cameras** played back (see blue markers on the picture):



If **User** selects **Camera** on **Scene** and enables **Synchronization** again, all other **cameras** will get synchronized with the selected **Camera** (**Position** and **Speed** will be synchronized).

Searching through Archive

HD Witness provides many features that make archive search faster, more convenient and intuitive. Since archive may contain significant video data (taken over several months), it is crucial to minimize the time spent by a user on searching a particular event.

The following search methods are introduced:

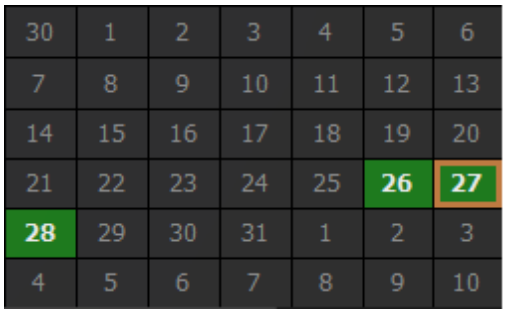
- **Calendar** – pan temporal time line can zoom in on selected date to make search easier (see "Using Calendar").
- **Smart Motion Search** – select a region on video and allow for the application to automatically refine the archive and highlight the fragments that involved motion. See "Performing Smart Motion Search".
- **Thumbnail Navigation** – small previews are displayed on top of the Time Line to help locate a particular scene. See "Using Thumbnails for Better Navigation".
- **Preview Search** – select a region and allow for the application to provide videos that represent a time period based on time stamps. See "Preview Search".

Using Calendar

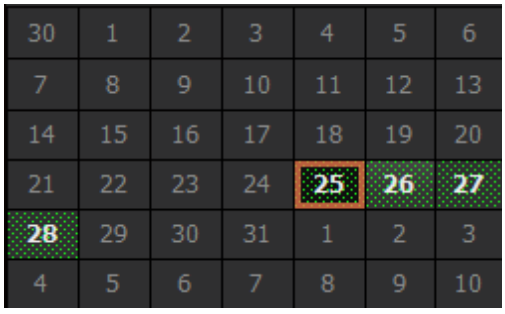
This type of search helps the user to locate an event that took place on a particular date.

To perform a calendar search:

1. Open **Camera** that contains the archived event.
    1. Press CLND. Calendar will appear above **Time Line**. The dates that are displayed on **Time Line** are highlighted in green:



3. Select a desired date in **Calendar**. **Time Line** zoom will be changed: only the selected date will be visible. If the archive contains data outside the visible bounds, it will appear in shadowed green:



Note: it is possible to select several dates in Calendar holding ***CTRL***.

Performing Smart Motion Search

Smart Motion Search enables **User** to perform fast and intuitive archived motion search.

To perform **Smart Motion Search**, select the desired region and HD Witness will display all fragments that contain motion throughout the archive (scanning through a yearly archive only takes a few seconds).

IMPORTANT. **Smart Motion Search** in HD Witness assumes the selected **Camera** supports **Motion Detection**. It is important to perform motion setup as well. See "Setting up Motion Mask and Motion Sensitivity".

To perform **Smart Motion Search**:

1. Open Motion Grid on the camera:
   - use **Camera**'s **Quick Button** ( )
   - open **Camera**'s Context Menu and choose *Motion Grid* (or select it and press ***Alt + G***)

   Motion Grid will appear:

   Note: if red fragments appears in motion zones, **Motion Detection** is supported by **Camera**.
2. Select the region the motion should be searched on:
   - Hold ***Shift***, **Left Click and Drag**:
   - ***Ctrl*** + **Click and Drag** to add another region
   - **Click and Hold Left Mouse Button** or use Context Menu (*Clear Motion Selection*) to clear all regions.

IMPORTANT. Motion will not be visible and detected on a region marked as **Motion Mask.**

As soon as the region is selected, **Time Line** will be populated with **red bars**. Each bar indicates recording period that contains motion.

IMPORTANT. Navigation in **Time Line** is possible by red fragments only until **Smart Motion Search** is **off.**

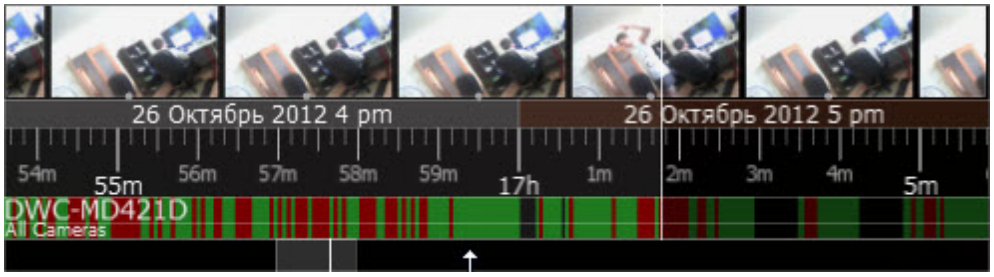
To disable **Smart Motion Search**, clear all regions in **Motion Grid** or disable pressing the button (or use Context Menu *Hide Motion Grid* or ***Alt + G***).

Using Thumbnails for Better Navigation

The **Thumbnail** feature is a fast and convenient way to navigate through archive. **Thumbnails** are single snapshots taken from archived video footage that are displayed on the **Time Line**. This feature serves as another useful forensic tool for analyzing video.

To open **Thumbnails**:

1. Click on the desired **Camera**.
2. Click on THMB button or point a mouse cursor over the top of **Time Line**, click and **pull it up**:



If no **Thumbnails** are displayed, then there is no archive available for this particular **Camera**.

Thumbnails panel can be re-sized. To re-size, point a mouse cursor over **Time Line**, click and pull it up or down:

The white dots under the pictures point on the exact archive place where the shot has been taken. When clicking on **Thumbnail**, the current playback position will jump to the corresponding spot in the archive.

To close **Thumbnails**, press THMB again or pull the **Thumbnails Panel** down.

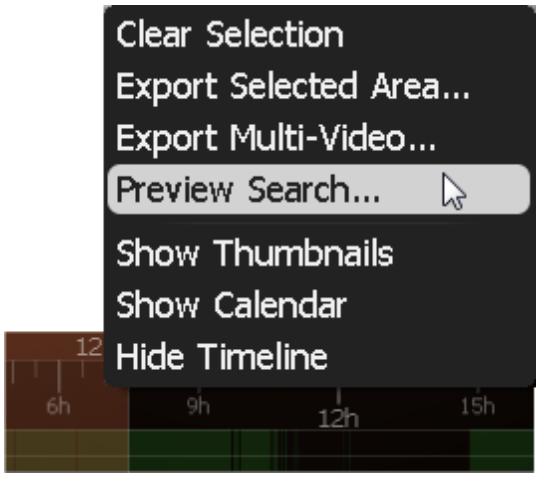
See also "Preview Search".

Preview Search

This feature helps to search data through large archives. It breaks the selected range of time into smaller time increments and displays these increments as separate **Items**. For instance, it breaks a month period into ten 3-days periods displaying them as separate **Items**, which makes it possible to locate a specific event in one of these periods (then breaking this period into nine 8-hour periods and so on). Finally location of a specific event in archive may take 3-5 such iterations for initial period of several months.

To perform **Preview Search**:

1. Select the desired camera on Scene.
2. Select the region to export on Time Scale:
   - Use **Right-Click Drag**
   - Open Context Menu on **Time Scale** and click *Mark Selection Start* (or press "***[***"), then Mark Selection End (or press "***]***")



   - To clear selection, use the corresponding Context Menu item
   - Adjust the region by dragging edges to export
   - To make zooming easier, zoom on **Time Line** using a **Mouse Wheel**

3. Invoke Context Menu and choose *Preview Search*.

   New **Tab** will be opened. The **Tab** contains several **Items** representing the selected **Camera** in different periods.

   If click on **Items**, the selection on **Time Line** will display the particular period in archive related to the selected **Item**.

   If the selection does not contain archive data this feature is not available.

4. Locate the period of time the desired event took place and select appropriate **Tab**.
5. Repeat steps **1-3** on the desired **Item** on **Preview Search Tab** to refine search.

It is also possible to perform the following actions in **Preview Search Tab**:

- Navigate through archive
- Thumbnail Navigation
- Smart Motion Search
- Calendar Search
- Tours
- Screenshot
- Export.

Playing Back Local Files in HD Witness

In addition to powerful camera playback engine HD Witness can also act as **Media Center**: it can play back almost any file. Most major codecs and most major containers are supported. This section contains detailed description of **Local Files** playback:

- Local files structure in Resource Tree
- Configuring Media Folders
- Opening Local Files Outside of Media Folders
- Navigating Through Local Files
- Adjusting Volume while Viewing Local Files.

Additionally it is possible to export fragments from video files (see "Exporting") and to take screenshots (see "Taking Screenshot").

IMPORTANT. Some video files may contain 5.1 sound stream. In order to play back those files on stereo speakers:

1. Open Main Menu and choose System Settings in the General tab.
2. Check *Downmix Audio from 5.1 to 2.1 Channels*.
3. Restart **Client**.

Local files structure in Resource Tree

All local files are displayed in Resource Tree under the *Local* node, which include:

- Files that are located in **HD Witness Media Folders** (see “Configuring Media Folders”)
- Recently opened local files (see “Opening Local Files Outside of Media Folders”)
- Exported files (see “Exporting”)
- Screen Recordings (see “Screen Recording”)
- Screenshots (see "Taking Screenshot").

IMPORTANT. All files except the ones in media folders, are displayed in Resource Tree until HD Witness is **restarted**. When saving or restoring **Layout** that contains **Items** located outside the media folders, they will get restored in Resource Tree as well.

Configuring Media Folders

When HD Witness starts, it automatically indexes local media folders in order to find and display local files in Resource Tree. By default, **the current user's video folder** (C:\Users\$User\Videos) is configured as media folder.

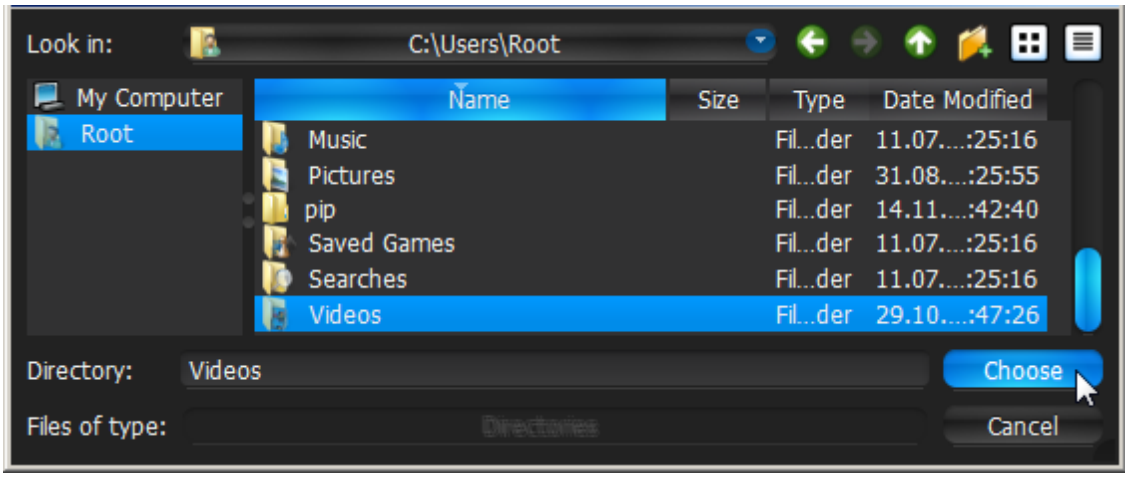
To configure unlimited number of media folders:

1. Open Main Menu and choose *System Settings*.
2. Go to *General.*

3. If needed to change *Main Media Folder*, click *Browse* and choose the desired path.

4. Configure *Extra Media Folders*:

   To add extra media folder click *Add…* and choose the desired path.



   It is possible to perform standard files and folders operations in this form (similar to Windows Explorer).

   To delete an extra media folder, select the folder from the list and click *Remove*.

5. Click *OK* when finished (or *Cancel* to discard changes).

As soon as media folders are configured, HD Witness should be restarted. Then files from the specified media folders will be visible in Resources Tree (under the *Local* node). It is possible to place such resources in **Layouts**. Search is also available for **Local Files**.

See also "Opening Local Files Outside of Media Folders".

Opening Local Files Outside of Media Folders

It is possible to open **Local Files** outside **Media Folders** and thus are not visible in Resource Tree.

Use one of the following:

- **Drag-n-Drop one or several video files** from Windows Explorer to HD Witness window
- **Drag-n-drop a folder containing video files** from Windows Explorer to HD Witness window
- Open Main Menu and choose *Open –> File(s)…* (or use ***Ctrl + O***) then choose the file(s) to be opened
- Open Main Menu and choose *Open –> Folder…* then choose a folder to be opened
- Invoke Context Menu on **Scene** (on empty space) and choose *Open –> File(s)…* (or use ***Ctrl + O***), then choose the file(s) to be opened
- Invoke Context Menu on **Scene** (on empty space) and choose *Open –> Folder…*, then choose a folder to be opened.

Any opened files will be shown in Resource Tree until HD Witness is restarted. If restore **Layout** that contains **Items** located outside of **Media Folders** they will be restored in Resource Tree as well.

Navigating Through Local Files

Navigation through **Local Files** very similar to the navigation through **Camera** archive, except:

- All items are **not synchronized** (**Sync** is always disabled)
- No **Live** for **Local Files**
- **Time Line** is not colored (no recorded or motion regions).
- and buttons move position to the beginning or to the end of the file.

All other operations (seek, play, pause, ff/rew, etc.) are described in details in "Navigating through Archive and Live".

IMPORTANT. If **Scene** contains both **Cameras** and **Local Files**, **Cameras** are played back synchronously and **Local Files** – independently.

Adjusting Volume while Viewing Local Files

If several **Local Files** are opened simultaneously, **no sound is played**. In order to hear sound from a video, a user must first select it.

To adjust **Volume**, use one of the following:

- Use **Volume Slider** (at the right of the **Time Line**)
- Use a **Mouse Wheel** above the slider
- Use ***Ctrl + Up/Down***
- Use button or use "***P***" key to mute/unmute.

Forensic Analysis

HD Witness provides a wide number of features for forensic analysis of recorded streams. This section explains how to perform forensic analysis in the application:

- Expanding Items to Fullscreen
- Zoom
- Rotate.

Expanding Items to Fullscreen

In order to perform forensic analysis, it is recommended to switch the desired **Item** to **Fullscreen**.

To toggle **Fullscreen**, proceed with one of the following:

- **Double Click** on the desired **Item** on **Scene**
- Open Context Menu and select *Maximize Item/Restore Item* (or press ***Enter***)

When in **Fullscreen** mode, all Side Panels are hidden. Use icons for panels to appear.

If several **Cameras** are displayed simultaneously, then the recorded fragments are combined on **Time Line**. If **User** switches **Item** to **Fullscreen**, only recorded fragments related to the selected **Item** are visible.

Note: it is possible to expand **Items** to **Fullscreen** sequentially (like slide-show). See "Tours" for more information.

Zoom

Zoom is extremely useful when it comes to working with **high resolution Cameras**. It is possible to **Zoom in** on single **Item** in Fullscreen or whole **Layout** if needed.

To **Zoom in/out**:

- use a **Mouse Wheel** which will only **Zoom** on the area that has a cursor over it
- use "**+**"/"**-**" keys (zoom relatively to the center of the **Scene**).

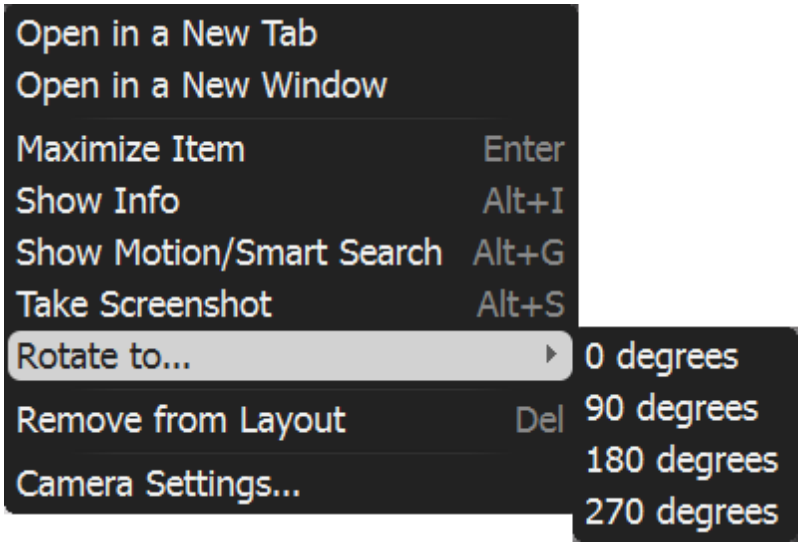
To move the zoomed Item, use either **Left** or **Right Mouse Button**. If Layout is zoomed, **Left Mouse Button** is reserved for **Item drag**. In this case, use **Right Mouse Button**.

To restore the initial size of an item, use **Double Click**.

Rotate

Rotation can be performed using **Item**'s **Quick Button** ( ). Just **Click and Hold Item** and **Drag the Mouse** to rotate **Item** on **Scene**:

It is possible to use **Item**'s Context Menu (*Rotate to...*):



Finally it is possible to rotate **Item** while holding ***Alt*** (**Left Click and Drag** mouse). Release when finished.

To perform **coarse rotation**, hold ***Ctrl*** while rotating (with ***Alt*** or). Release when finished.

Exporting

HD Witness provides powerful and flexible **Export** capabilities. It is possible to perform **Export** in different formats, **Export** several videos simultaneously and perform synchronous playback of such videos, add metadata to exported videos etc.

Existing **Export** options:

- Single Camera Export. Allows exporting to AVI and MKV formats. Adds time stamps to exported video (start and end time).
- Multi-Video Export. Allows exporting to proprietary format (should be played by HD Witness) as well as executable bundle (can be viewed on every WIndows computer). Export is performed with additional metadata (time stamps, recorded fragments data, motion etc).
- Checking the Validity of Exported Videos.

Note: **Export** are available to **Administrators** and **Viewers** that have appropriate permissions.

Single Camera Export

This section provides detailed information on how to export video from a single **Camera**'s archive or **Local Video File**:

- Exporting Recorded Region from a Single Camera
- Viewing Videos Exported from a Single Camera

See the "Multi-Video Export" section for more information on exporting video from several **Cameras** or **Local Files** simultaneously.

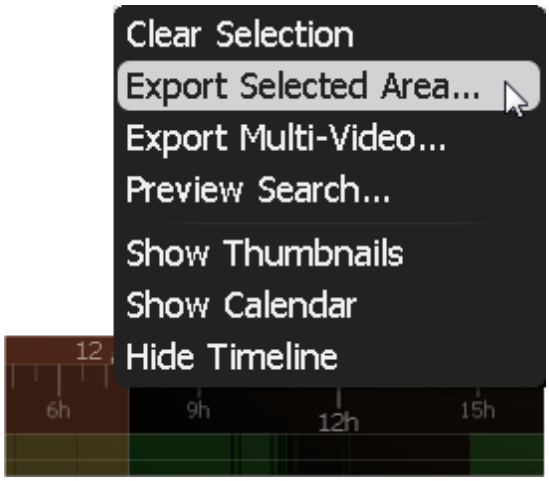
Exporting Recorded Region from Single Camera

HD Witness supports **Export** in two media formats: Matroska (**mkv**) and **avi**. These formats are supported by most players (additional codecs may be required for playback).

Export can also be done for **Local Video Files**.

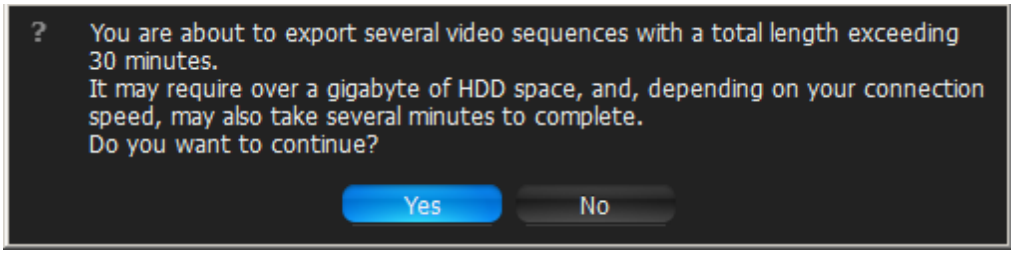
To **Export**:

1. Select the desired **Item** on **Scene** (**Camera** or **Local Video File**).
2. Select the region to export on **Time Scale**:
   - Use **Right Click Drag**
   - Open Context Menu on **Time Scale** and click *Mark Selection Start* (or press "***[***"), then *Mark Selection End* (or press "***]***")
   - To clear selection, use the corresponding Context Menu item
   - Adjust the region to export by dragging edges
   - To make zooming easier, zoom **Time Line** using a **Mouse Wheel**
3. Invoke Context Menu and choose *Export Selected Range*:

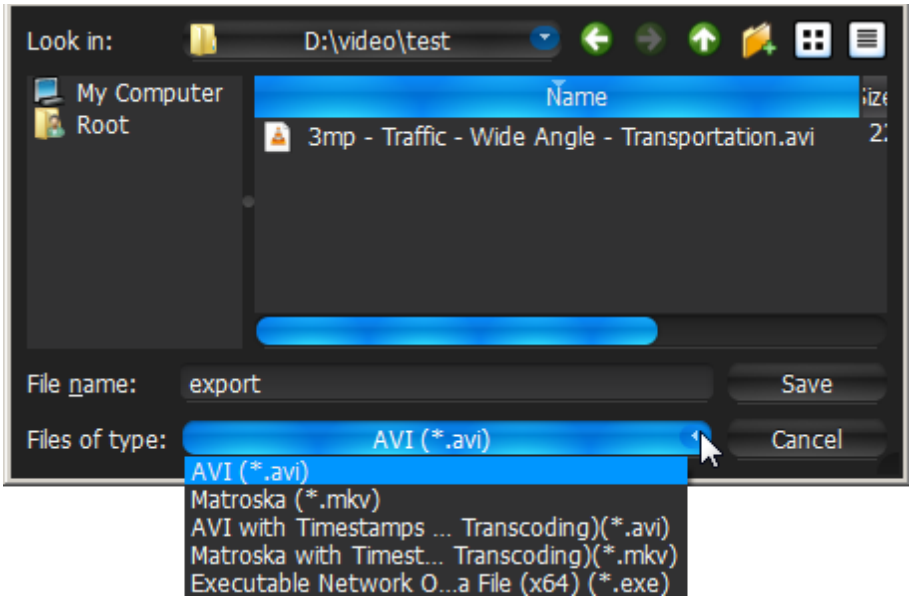


If the selection does not contain archive data, this feature is not available. If the selection starts with empty archive (see the screenshot above), the exported footage will start from the first available frame (empty archive will not be exported). If the selection contains empty archive in the middle, it will still be exported and **NO DATA** will be shown when viewing the exported footage.

IMPORTANT. If a long period of time is selected for export, export may be slightly delayed. In this case, the following warning will appear:


You are about to export several video sequences with a total length exceeding 30 minutes.
It may require over a gigabyte of HDD space, and, depending on your connection speed, may also take several minutes to complete.
Do you want to continue?
Yes
No

4. Choose the desired **file name**, **format** and **location** and click *Save* (*Cancel* will close the dialog and no exported data will be saved):



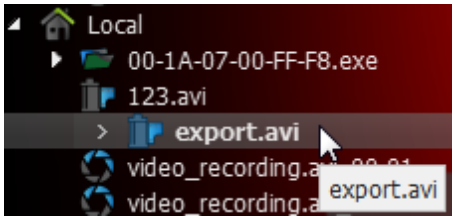
File and folder operations are performed in the same manner as in Windows Explorer.

The following formats are supported:

- **AVI** is more widely used, but the codec remains intact (H264). To view exported videos in other players may require additional codecs. Additionally some codecs are not allowed in **AVI** format. A warning message will appear. This is a default format.
- **AVI with Timestamps.** Ability to export with timestamps rendered on video. Requires transcoding on client, so may take a long, slightly decrease quality and increase processor load up to 100% during export.
- **MKV** is a more advanced format, but may not be played back on some devices (ex: home media players). It does not restrict video and audio content.
- **MKV with Timestamps.** Same as **AVI with Timestamps** but the format will be **MKV**.
- **EXE** is used for distributing videos to the users who do not have any codecs or media players installed. As soon as this executable is started, new **Client** instance is run and plays back the exported video. In this case, **the data on motion and recorded fragments is also exported**.

IMPORTANT. Files produced with the **x64** version of software will only be viewable on Windows **x64**; however, **x86** can be viewed on any architecture.

As soon as export is finished, the video will be available in *Local Files* in Resource Tree:

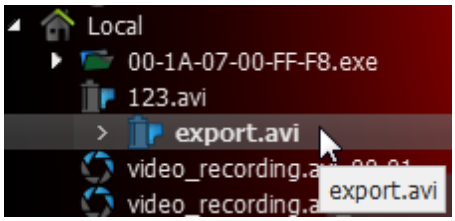


IMPORTANT. This resource will be available **until Client restarts**. To make it available permanently, save the exported video to HD Witness **Media Folder** (see "Configuring Media Folders") or create and save a **Layout** that would contain this video.

Also, see the "Viewing Videos Exported from a Single Camera" section for more information.

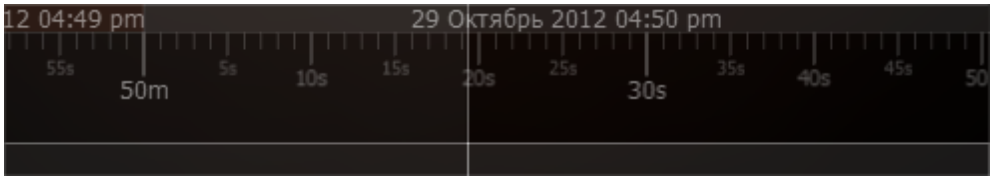
Viewing Videos Exported from Single Camera

As soon as export is finished, the extracted video clip will be available in *Local Files* in Resource Tree. Note that **AVI** and **MKV** files are shown as a single record and **EXE** file - as **Folder** containing exported **Camera**:

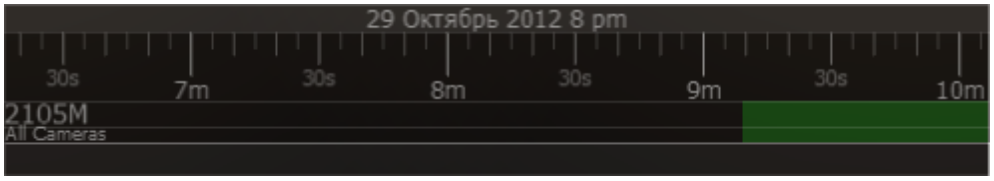


It is possible to open either an **EXE** file (it will be displayed in new **Tab)** or open a camera - it will be displayed as single **Item**.

When the exported file is opened, **Time Line** will display the exported time range:



If **EXE** bundle is opened, then the recorded fragments and motion will be displayed on the Time Line as well:



Note: start and end time points **differ from a regular Local File**. It is the start and end time of the **exported fragment**. When viewing information, the time will be displayed in **Item**'s bottom right corner.

Multi-Video Export

This section provides detailed information on how to export video from a single **Camera**'s archive or **Local Video File**:

- Exporting the Layout in Multi-Video Format
- Viewing Multi-Videos
- Changing Multi-Videos after Export.

Also, see the "Single Camera Export" section for information on exporting video from a single **Camera** or **Local File**.

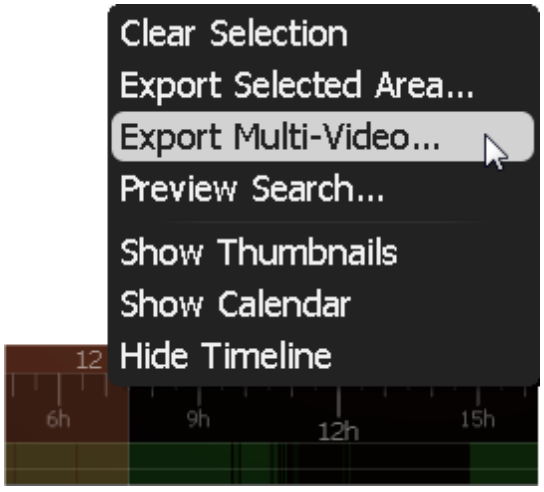
Exporting Layout in Multi-Video Format

HD Witness provides a powerful feature to perform **Export** in a proprietary format, which has many benefits in comparison to standard **Export** (see "Exporting Recorded Region from Camera"):

- It is possible to **export several videos simultaneously** (for instance, it is possible to export the last hour of recording from five cameras). The exported files are saved as regular **Layout** and can be opened in HD Witness. The exported **Multi-Video** can be navigated through as any other layout (see "Navigating through several cameras synchronously"), perform Smart Motion Search, etc.
- It is possible to export additional information (recorded chunks and motion).
- It is possible to prepare a bundled version that can be run and viewed on clean **Windows** systems.

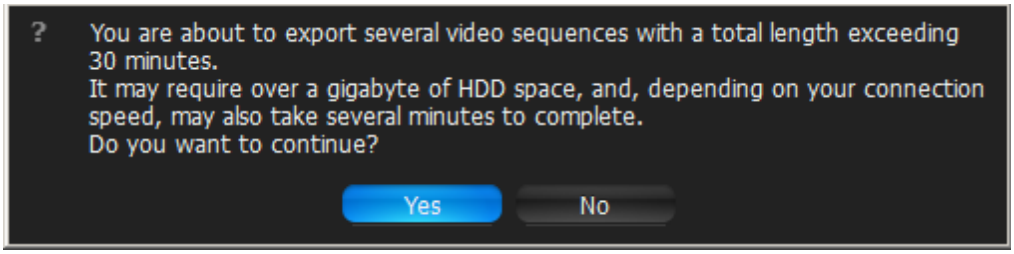
To do **Export in proprietary format**:

1. Place the desired **Items** on **Scene.** A user can export either Cameras or **Local Video Files**, but cannot mix the two.
2. Select the export region on **Time Scale**:
   - Use **Right Click Drag**
   - Open Context Menu on **Time Scale** and click *Mark Selection Start* (or press "***[***"), then *Mark Selection End* (or press "***]***")
   - To clear selection, use the corresponding Context Menu item
   - Adjust the export region by dragging edges
   - For easier zoom, scroll the **Mouse Wheel** on **Time Line.**
3. Open Context Menu and choose *Export Multi-Video*:

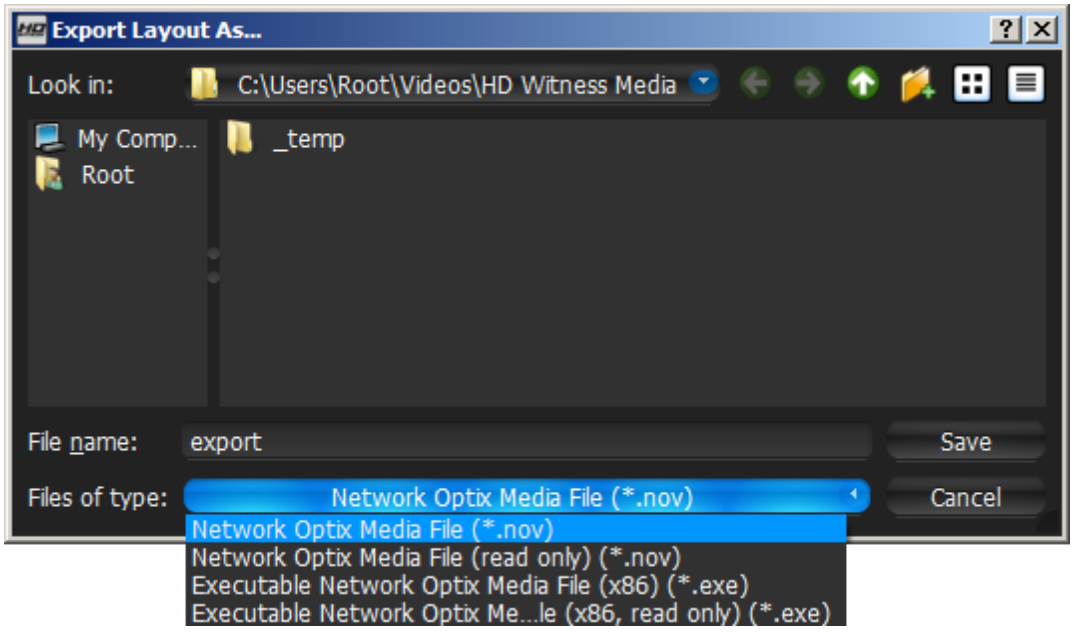


If the selection contains empty archive on **Camera,** it will be exported and **NO DATA** will be shown when viewing the exported clip.

IMPORTANT. If a long period of time is selected for export, it may cause delays. In this case, the following warning message will appear:


You are about to export several video sequences with a total length exceeding 30 minutes.
It may require over a gigabyte of HDD space, and, depending on your connection speed, may also take several minutes to complete.
Do you want to continue?
Yes
No

4. Choose the desired **file name**, **format** and **location** and click *Save* (*Cancel* will close the dialog and no exported data will be saved):



File and folder operations are performed in the same manner as in Windows Explorer.

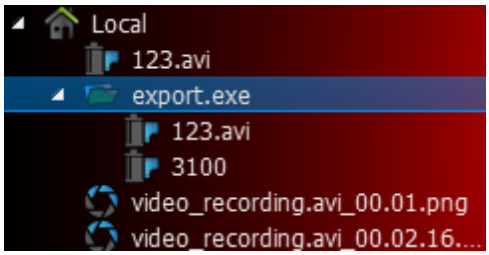
The following formats are supported:

- **NOV** – a proprietary format. Can be opened by HD Witness Client only. Can be changed if needed (see "Changing Multi-Video after Export").
- **NOV (Read-Only)** – a proprietary format. Should be opened by HD Witness. Cannot be changed.
- **EXE** – an executable bundle (platform dependent – **x86** or **x64**). Can be opened without HD Witness installed on the computer. Can be changed in the future if needed (see "Changing Multi-Video after Export").
- **EXE (Read-Only)** – a proprietary format (platform dependent – x86 or x64). An executable bundle. Can be opened without HD Witness installed on the computer. Should be opened by HD Witness. Cannot be changed.

  EXE is used for distributing videos to the users who do not have any codecs or media players installed. As soon as the bundle is started, the **Client** is run and it plays back the exported video. In this case, the **data on motion and recorded fragments is also exported**.

IMPORTANT. Files produced with the **x64** version of software will only be viewable on Windows **x64**; however, **x86** can be viewed on any architecture.

As soon as export is finished, **Multi-Video** will be available in local files:

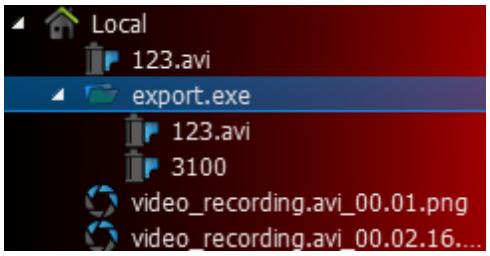


The following operations can be performed:

- View videos (see "Viewing Multi-Videos") as **Layouts**
- View single **Items** from the videos
- Edit **Multi-Videos** if not read-only (see "Changing Multi-Video after Export").

Viewing Multi-Videos

After performing **Multi-Video Export**, the exported file is displayed in local files as follows:



The following operations can be performed:

- View a single camera from Multi-Video. Perform actions described in "Adding Items to Layouts".
- Open entire **Multi-Video**. It will be opened as a regular **Layout** on a separate **Tab**. Perform actions described in "Opening and Closing Saved Layouts".
- Delete items from Multi-Video. See "Changing Multi-Video after Export".

When **Multi-Video** is opened, the following standard features can be performed:

- Navigation through archive
- Thumbnail Navigation
- Preview Search
- Smart Motion Search
- Calendar Search
- Tours
- Screenshots
- Single Camera Export
- Export (incl. Multi-Video Export)
- Checking the Validity of Exported Videos
- Layout Reconfiguration
- Forensic Analysis.

Any capabilities possible with **Cameras** can also be performed with **Multi-Videos** in HD Witness.

Changing Multi-Videos after Export

HD Witness offers many possibilities when working with **Multi-Videos**. A user can do almost everything as with regular **Layout**:

- Add or remove **Items**. For instance, if **Multi-Video** was exported from **10PM** to **11PM** and a new camera was added, it would get synchronized with other cameras and be displaying in the same archive (**10PM – 11PM**). See "Adding Items to Layouts" and "Removing Item(s) from Layouts".
- Adjusting **Layout Look and Feel** (move, swap, resize, rotate). See "Adjusting the Layout Look and Feel".
- Save modified **Multi-Video**. One restriction is applied: it is not possible to mix **Local Videos** and **Cameras** in a single **Multi-Video**. Same as **Layouts** (see "Saving Layouts (Admin Only)"), but can be performed by **Viewers**.

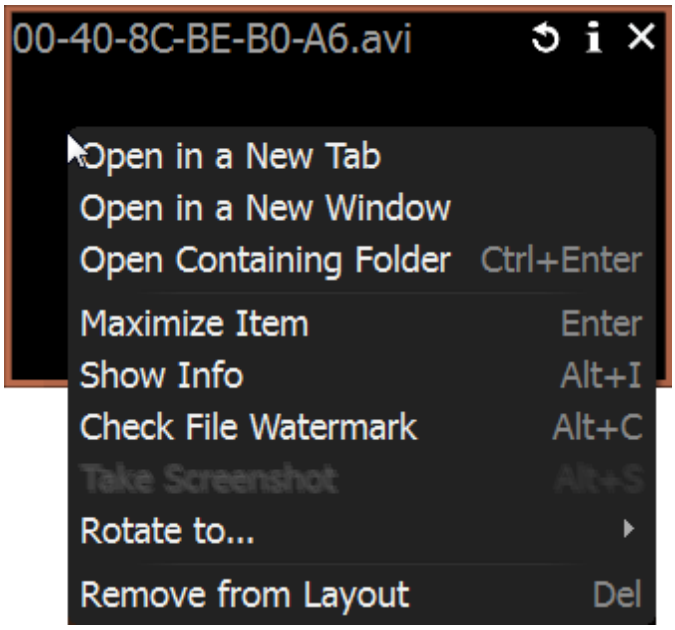
Note: **Multi-Video** can be saved with a read-only flag (modifications will not be saved).

Checking the Validity of Exported Videos

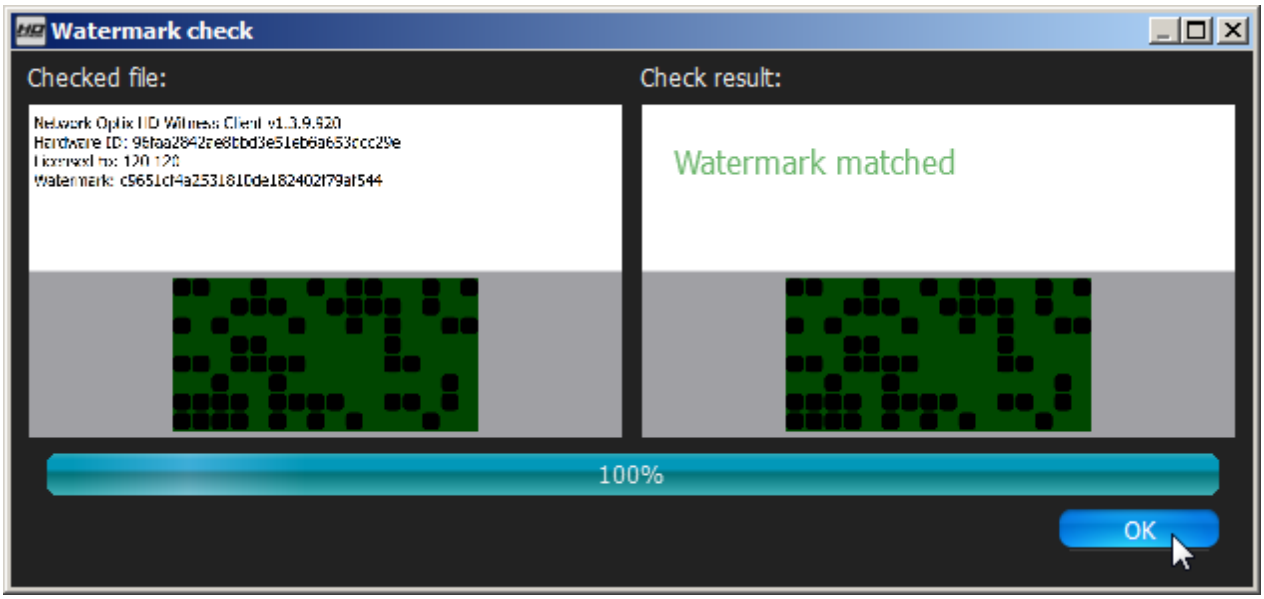
Watermark allows **Users** to check for validity of footage to determine whether or not any modifications were ever performed to the native footage. Any videos exported by HD Witness (either single **Cameras** or **Multi-Videos**) can be checked for validity.

To check the validity of exported videos:

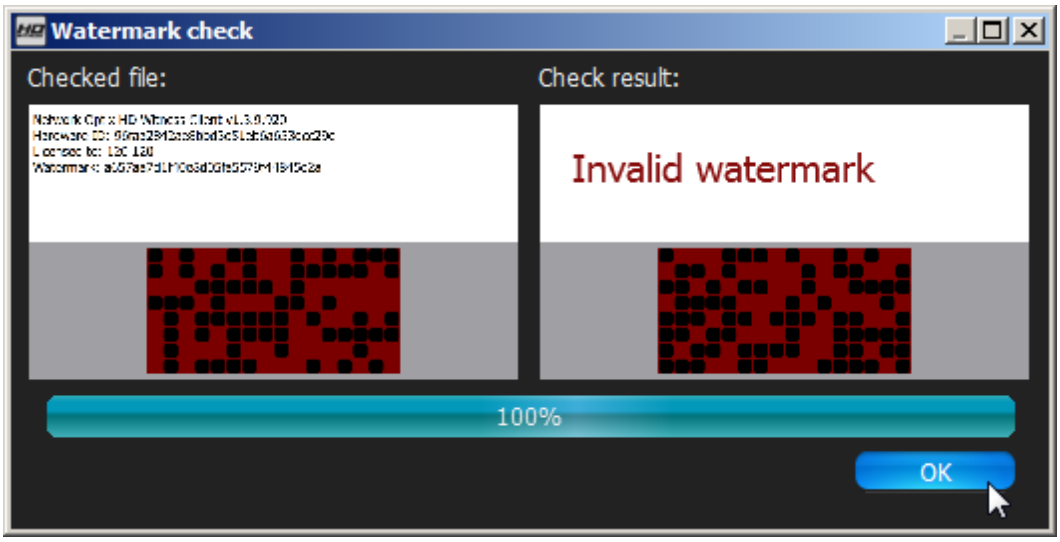
1. Bring the desired video onto the scene
2. Open Context Menu and select *Check File Watermark* (or press ***Ctrl + C***)



3. If the file is in its original state, the check will succeed:



4. If any modifications took place, the check will fail:

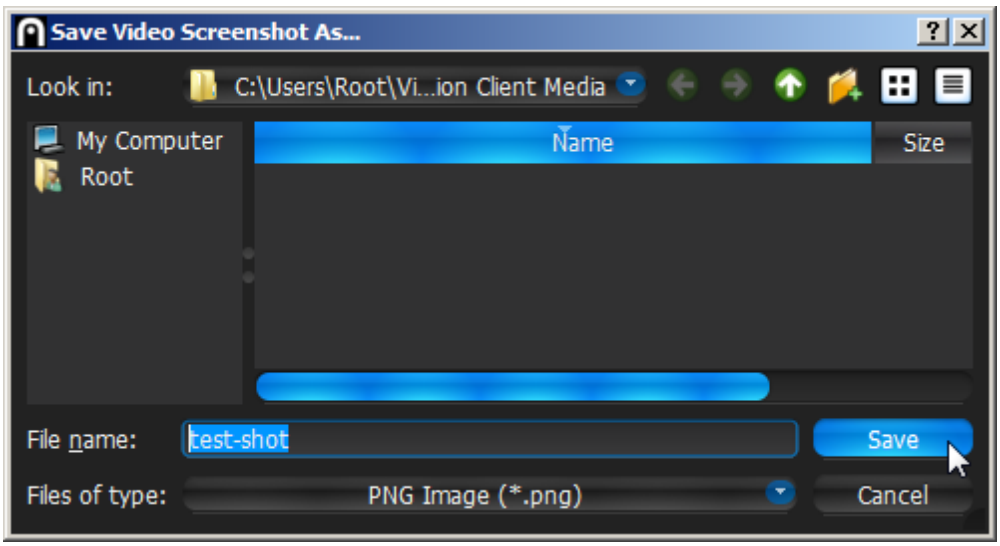


Taking Screenshot

Screenshot can be taken from both **Cameras** and **Local Video Files** to **PNG** or **JPG** output formats.

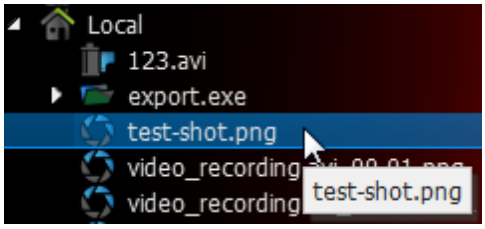
To take **Screenshot** from a video:

1. Select the desired **Item** on **Scene**.
2. Seek to the desired position (frame seek will help). See "Navigating through Archive and Live".
3. Open Context Menu and choose *Take Screenshot* (or use ***Alt + S***).
4. Choose the desired file name and location and click *Save* (*Cancel* will close the dialog and data will not be saved):



File and folder operations are performed in the same manner as in Windows Explorer.

Once saved, **Screenshot** will be available in **Local Files** within Resource Tree:



IMPORTANT. This resource will be available **until Client restarts**. To make it available permanently, save the exported video in the HD Witness **Media Folder** (see "Configuring Media Folders") or create and save a **Layout** that would contain this video.

Tours

If several **Items** are opened on **Scene**, this feature will provide the ability to automatically switch to the next **Item** in a Fullscreen mode (like **slide show**). To start **Tour**:

1. Select several **Items** (see "Adding Items to Layouts")
2. Open Context Menu and select *Start Tour* (or press ***Alt+T***)

To stop **Tour**, **Double-Click** or press ***ESC***.

To change sequence speed (the frequency in between **Items** during **Tour**):

1. Open Main Menu and go to *System Settings*
2. Specify the desired delay (in seconds) in *Sequence Cycle Time*

Screen Recording (Windows Only)

This is an extremely useful feature in HD Witness for presentations. It is possible to record from several displays with sound, select different quality, etc.

Screen can be recorded in the following formats:

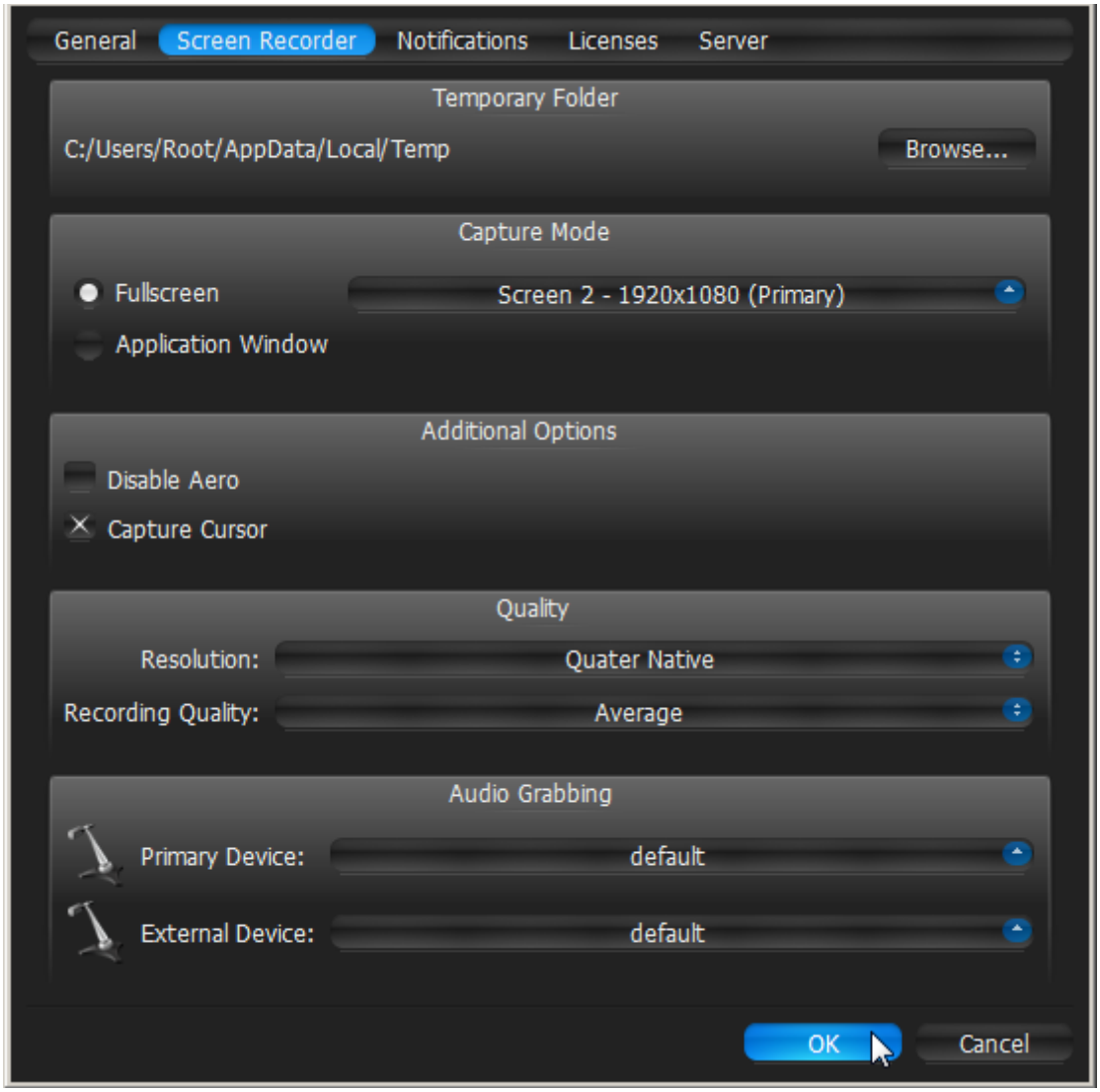
- Video: **MPEG4 Part 2**
- Audio: Stereo (**Lame Audio Codec**)
- Container: **AVI**

IMPORTANT. It is necessary to have a powerful processor and video adapter to do screen recording. See recommended configuration in the installation guide.

Setting up Screen Recording

To set up **Screen Recording**:

1. Open **Main Menu** and choose *System Settings*.
2. Go to the *Screen Recording* tab.
3. Configure **Screen Recording** parameters:



- *Temporary Folder* – the folder that stores temporary files. FIles are stored during recording, then are copied to a specified folder to be saved.

IMPORTANT. This folder should be accessible and writable.

- *Capture Mode*: *Fullscreen* (if several monitors are installed the desired one should be chosen) or *Application Window* (only HD Witness window will be recorded).
- *Disable Aero* – select this option to enhance performance. If chosen, once **Screen Recording** is in progress, **Windows Aero** will be turned off.
- *Capture Cursor* – select this checkbox if a mouse cursor needs to be visible during recording.
- *Resolution* – select screen resolution. The lower the resolution, the higher the performance.
- *Encoder Quality* – select *Performance* for best performance. Select *Best* for best quality.
- *Primary* and *Secondary device* – select sound devices to enable audio. Audio will get mixed from both devices. The best practice is to select master from the sound card as primary and microphone as secondary. In this case, both sounds from HD Witness (i.e. video clips) and microphone will be recorded simultaneously.

4. Click *OK* when done or *Cancel* to discard changes.

Performing Screen Recording

To run **Screen Recording,** proceed with one of the following:

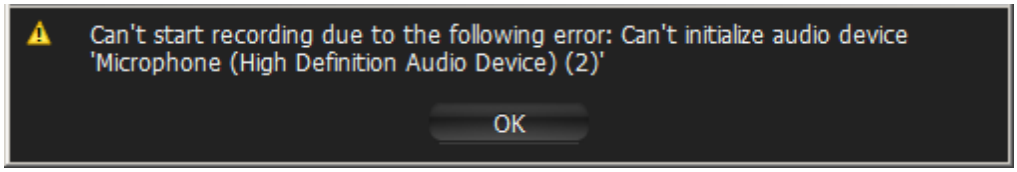
- Open Main Menu and select *Start Screen Recording* (or press ***Alt + R***)
- Open Context Menu on **Scene** (on empty space) and select *Start Screen Recording*
- Click on the icon in the top right corner.

Screen recording will start in 3 seconds.

When finished, proceed with one of the following:

- Open Main Menu and select *Stop Screen Recording* (or press ***Alt + R***)
- Open Context Menu on **Scene** (on empty space) and choose *Stop Screen Recording*
- Click on the icon again in the top right corner.

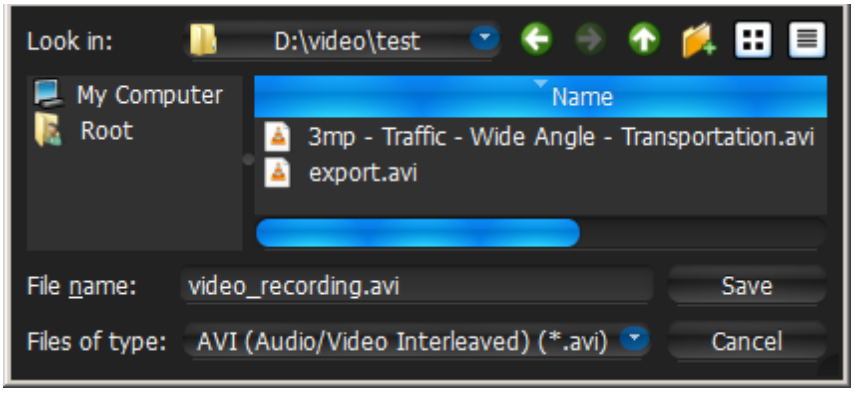
IMPORTANT. If audio parameters are setup incorrectly, **Screen Recording** will display the following error:


Can't start recording due to the following error: Can't initialize audio device 'Microphone (High Definition Audio Device) (2)'
OK

In this case it is necessary to do the following:

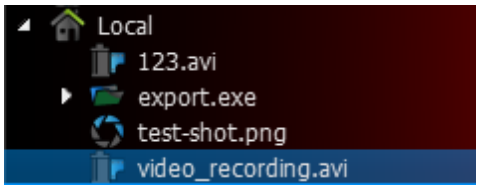
1. Set up audio card parameters in Windows, check and select default recording devices. Then try to record sound in Windows Recorder.
2. Set up Screen Recorder Parameters (see "Setting up Screen Recording").

Choose the desired file name and location and click *Save* (*Cancel* will close the dialog and data will not be saved):



File and folder operations are performed in the same manner as in Windows Explorer.

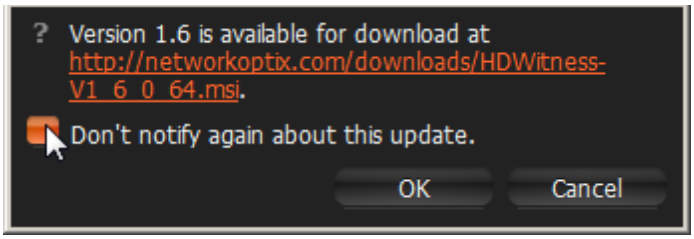
As soon as the file is saved, it will be available in local files:



IMPORTANT. This resource will be available **until Client restarts**. To make it available permanently, save the exported video to HD Witness **Media Folder** (see "Configuring Media Folders") or create and save a **Layout** that would contain this video.

Upgrading HD Witness

HD Witness offers automatic upgrades. Whenever a new version is released the following notification will appear:



To avoid further notifications, check *Don't notify again about this update.*

If the notifications have been disabled, it is possible to check for update manually. To do so, open Main Menu and click on *Check for Updates...*

Troubleshooting and Contacting Support

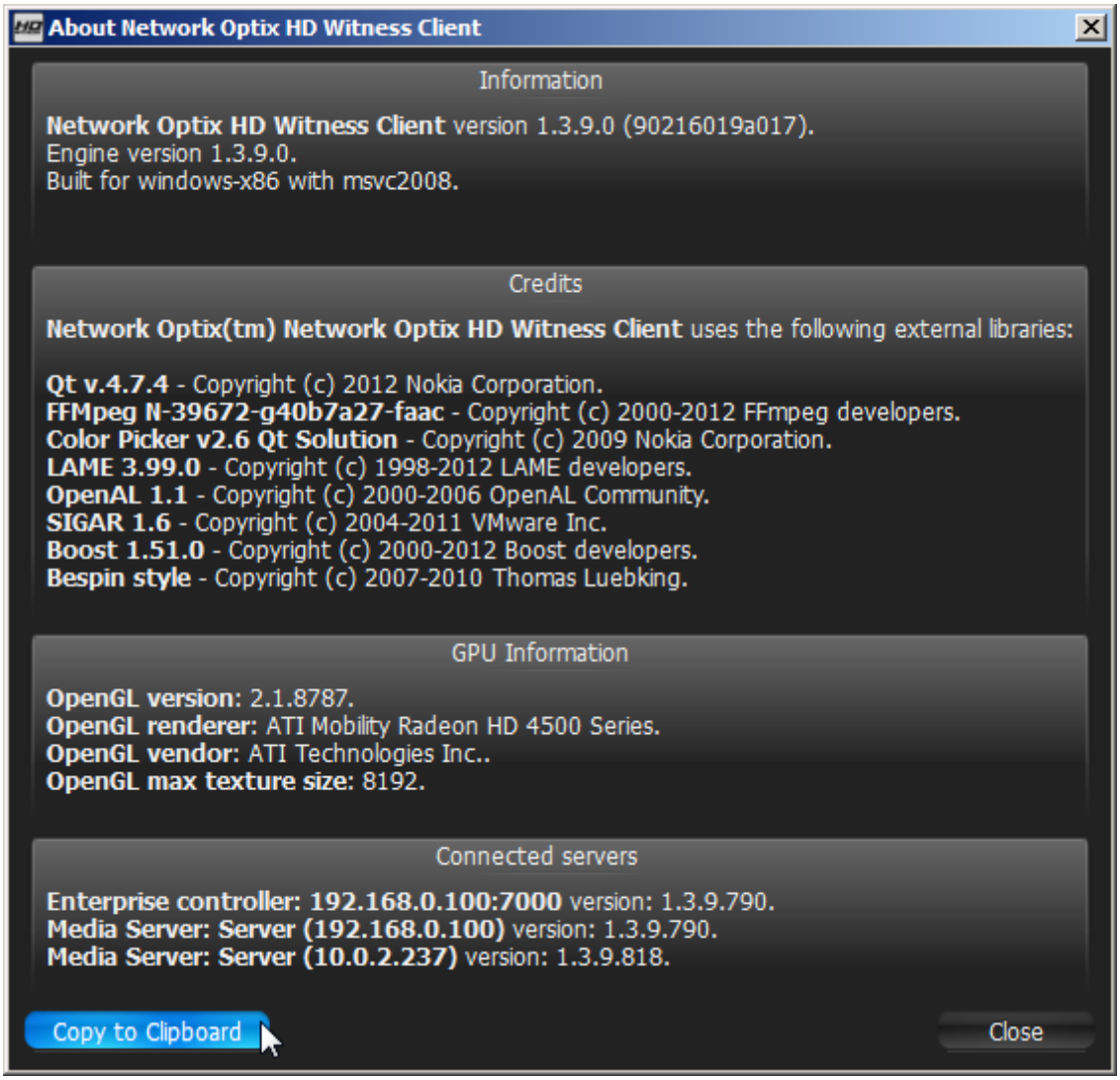
To contact support, use the following link: support@networkoptix.com

When posting an issue, it is necessary to describe the problem as detailed as possible. It is useful to provide additional information such as log files, network configuration, etc.

Required information:

- Hardware used
- HD Witness components and drivers versions
- External Libraries versions.

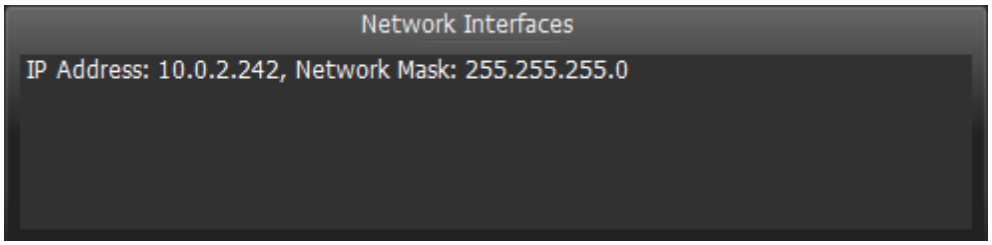
To obtain this information, open Main Menu and select *About* (or press ***F1***). The following form will appear:


About Network Optix HD Witness Client
Information
Network Optix HD Witness Client version 1.3.9.0 (90216019a017).
Engine version 1.3.9.0.
Built for windows-x86 with msvc2008.
Credits
Network Optix(tm) Network Optix HD Witness Client uses the following external libraries:
Qt v.4.7.4 - Copyright (c) 2012 Nokia Corporation.
FFMpeg N-39672-g40b7a27-faac - Copyright (c) 2000-2012 FFmpeg developers.
Color Picker v2.6 Qt Solution - Copyright (c) 2009 Nokia Corporation.
LAME 3.99.0 - Copyright (c) 1998-2012 LAME developers.
OpenAL 1.1 - Copyright (c) 2000-2006 OpenAL Community.
SIGAR 1.6 - Copyright (c) 2004-2011 VMware Inc.
Boost 1.51.0 - Copyright (c) 2000-2012 Boost developers.
Bespin style - Copyright (c) 2007-2010 Thomas Luebking.
GPU Information
OpenGL version: 2.1.8787.
OpenGL renderer: ATI Mobility Radeon HD 4500 Series.
OpenGL vendor: ATI Technologies Inc..
OpenGL max texture size: 8192.
Connected servers
Enterprise controller: 192.168.0.100:7000 version: 1.3.9.790.
Media Server: Server (192.168.0.100) version: 1.3.9.790.
Media Server: Server (10.0.2.237) version: 1.3.9.818.
Copy to Clipboard
Close

The information on network configuration is also important and should be provided to **Support Team** in addition to other details.

This information can be acquired by standard Windows tools (i.e.) **ipconfig**, but HD Witness provides a much more simple and intuitive way.

To obtain network configuration, open Main Menu and choose *System Settings*. Network configuration is displayed the *Network Interfaces* section of the *General* tab:



Lastly, Client Log Files may also be required and can be accessed from the following folder:

```
$USER\AppData\Local\Network Optix\Network Optix HD Witness Client\log
```

Glossary

Administrator – a user that configures HD Witness.

Archive – video and audio data recorded from cameras.

Aspect Ratio (AR) – video dimensions. Most commonly used are: 4:3 and 16:9.

Bitrate – number of bytes per second. Used to measure video stream.

Client – the software used to connect to servers and view video streams.

Codec – video or audio compression.

Dual Streaming – enables a camera to provide two separate streams simultaneously, yielding bandwidth and processor savings on Client (see RADASS).

Export – allows to export a video footage from archive. Exported video can be viewed on any device.

FPS – Frames per Second. Used to measure video stream.

GPU – Graphic Processing Unit. The processor installed on the video card.

HD Witness Server Components – HD Witness Media Server and Enterprise Controller.

Item – video or image on Scene.

Layout – saved video items and their position, size and orientation.Used to present surveillance information to HD Witness user.

Live – ability to view cameras live in real-time mode.

Media Server Port – used by **Media Server** to process requests for recorded fragments and video data from HD Witness Client.

Motion Detection – indicates whether or not any motion occurred within camera's viewing zone.

Motion Mask – the area in viewing zone that does not trigger **Motion Detection**.

Multi-Video Export – an ability to backup several videos in a proprietary format or executable bundle.

OS – Operating System.

Private (cameras) Network – the network used to transmit data from cameras to Media Server. It is not accessible from outside.

Public (Intranet) Network – the network used to connect to Media Server from outside. It can be used for either connecting Media Server to Enterprise Controller or configuring Server Components. It may or may not be connected to the Internet.

PTZ – Point, Tilt, Zoom (a camera must support PTZ for the feature to be used)

Resources – cameras, Media Servers, local video files, users and layouts.

RADASS – Resolution and Algorithmic Data Adaptive Scaling System. Enables dynamic switching of resolution to yield bandwidth savings and optimize processor load. Requires **Dual-Streaming** to be supported by the Cameras used.

RTSP Port – the port used by Media Server to process requests for media streams from HD Witness Client.

Server – the computer that HD Witness Media server is installed on.

Smart Motion Search – an ability to search by motion within the selected range. HD Witness will provide fragments with motion occurred in the specified region.

Super Administrator – an initial user with full access to HD Witness (his login is **admin**). This user cannot be deleted.

Sync – ability to play back several cameras simultaneously.

Preview Search – breaks down a period of time into smaller video segments. Example: a month broken into ten 3-day periods displaying them as separate video segments. Eases search of large archives.

Thumbnails – small snapshots of recorded footage. Used in searching for specific scenes.

URL – Uniform Resource Locator is a specific character string that constitutes a reference to an Internet/ Intranet resource. Used to establish connection to Enterprise Controller.

Viewer – a user with a limited access to HD Witness (not permitted to change configuration).

Watermark – used to check validity of exported files. If a file was modified or altered in any way, watermark will fail.

CONTACT US:

support@networkoptix.com
(800) 376-1170